Theater Geospatial Database Overview

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USARPAC Deputy Chief of Staff, G2

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USAREUR Deputy Chief of Staff, Engineer,
18th Engineer Brigade

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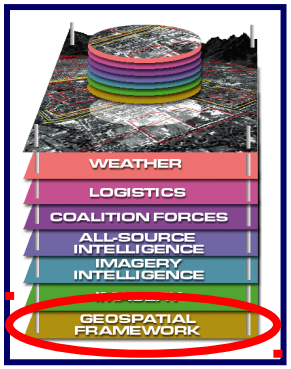
Agenda

Introduction

Purpose - Locations - Problem set - Solution set - What is the TGD

USARPAC TGD

Theater Org Chart -
Personnel -
Equipment -
Software -



USAREUR TGD

- **Theater Org Chart**
- **Personnel**
- **Equipment**
- **Software**

Closing

Funding - Execution Plan - Future Development - Conclusion

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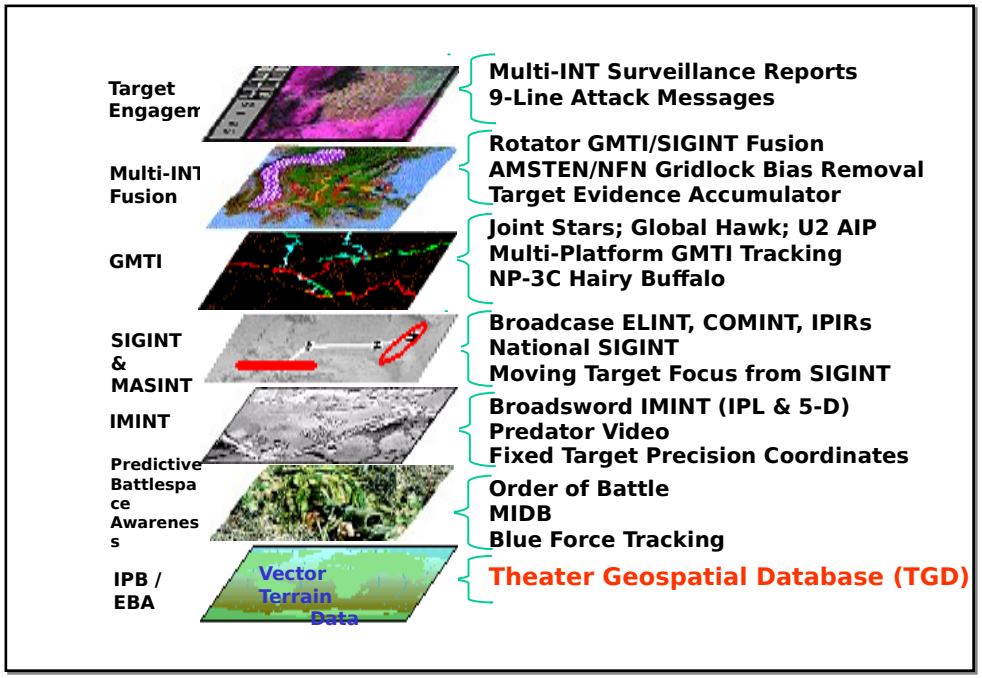
Purpose

Provide an overview of USAREUR and USARPAC efforts to develop and implement a Theater Geospatial Database (TGD).



Detailed questions will be answered at the TGD Workshop or demonstra

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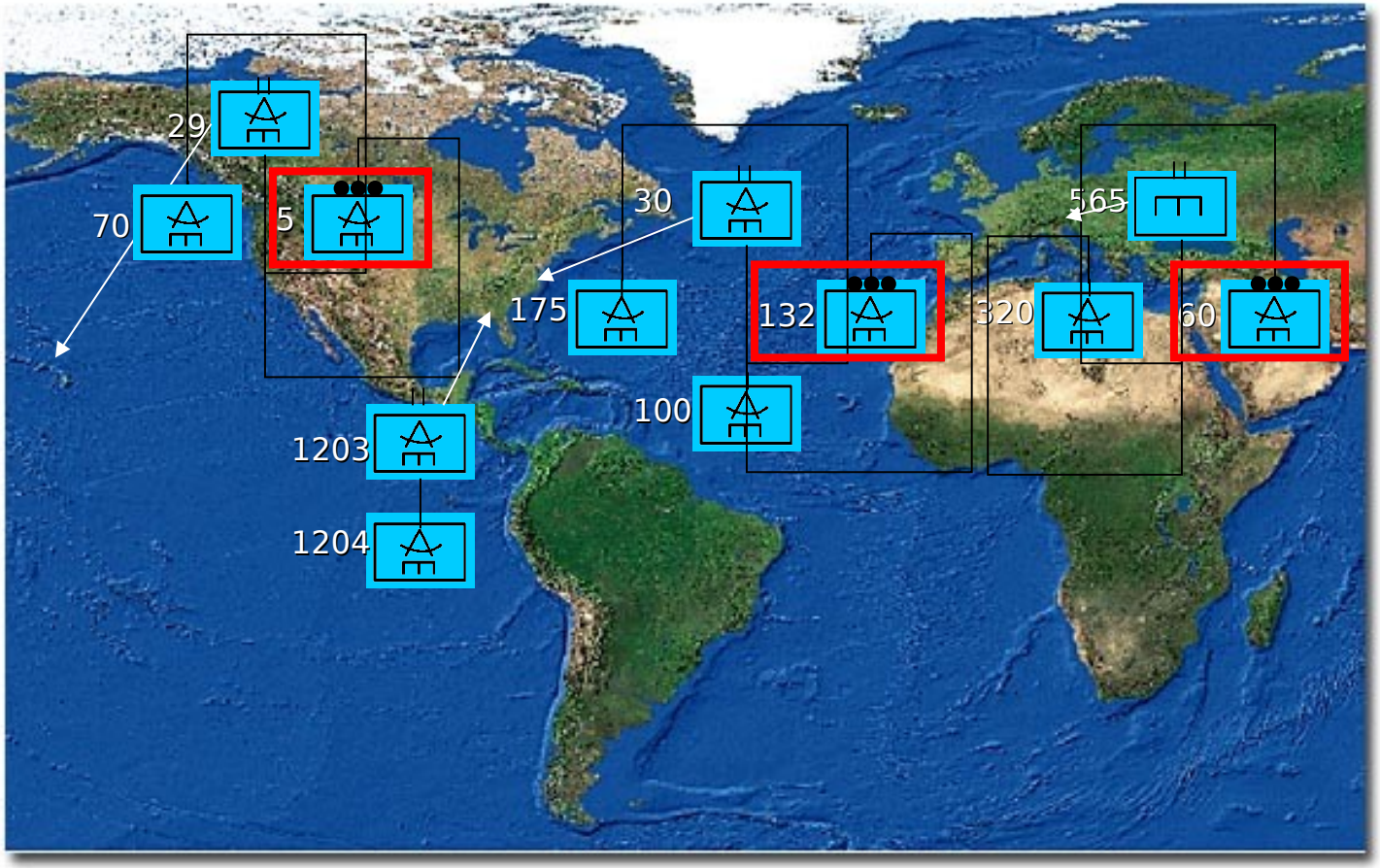
Current and Future Locations



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Problem Set

- There is no standardized theater geospatial database available to support geospatial and intelligence analysis during the IPB and EBA process.
- There is no effective method for sharing geospatial data with the National Geospatial-Intelligence Agency (NGA).
- Geospatial operations are “product-based” and therefore data are created, managed and disseminated in an ad hoc approach which varies from theater to theater. It’s like building cars one car at a time…
- Standard NGA datasets are incomplete and do not meet data-centric operational requirements.

IPB: Intelligence Preparation of the Battlefield
EBA: Engineering Battlefield Assessment

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Solution Set

- Standardized data structure on Army fielded systems: Digital Topographic Support System – Base (DTSS-B)
- Standardized commercial-off-the-shelf (SCOTS) software tools to create, analyze, manage and disseminate geospatial data and products
- Standardized metadata scheme based on existing standards
- Populate the TGD data model with data from NGA's Geospatial Intelligence Feature Database (GIFD) and other sources
- Develop a "data-centric" geospatial concept of operations
- Promote standardization by establishing an Army TGD/DTSS Configuration Control Board
- Implement a scaled TGD capability on all DTSS at other echelons and theaters

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What is the TGD?

- **Standardized hardware systems:** DTSS with additional HW/SW
- **Standardized commercial-off-the-shelf (SCOTS) software:** ESRI (ArcGIS/IMS/SDE, PLTS, JTX) ERDAS Imagine, SOCET SET, SQL Server 2000
- **Standardized data model:** based on the FACC
- **Standardized metadata scheme:** critical for data discovery and analysis
- **Standardized "data-centric" geospatial Tactics, Techniques and Procedures (TTP)**
- **Personnel:** military, DA civilian, and contractors

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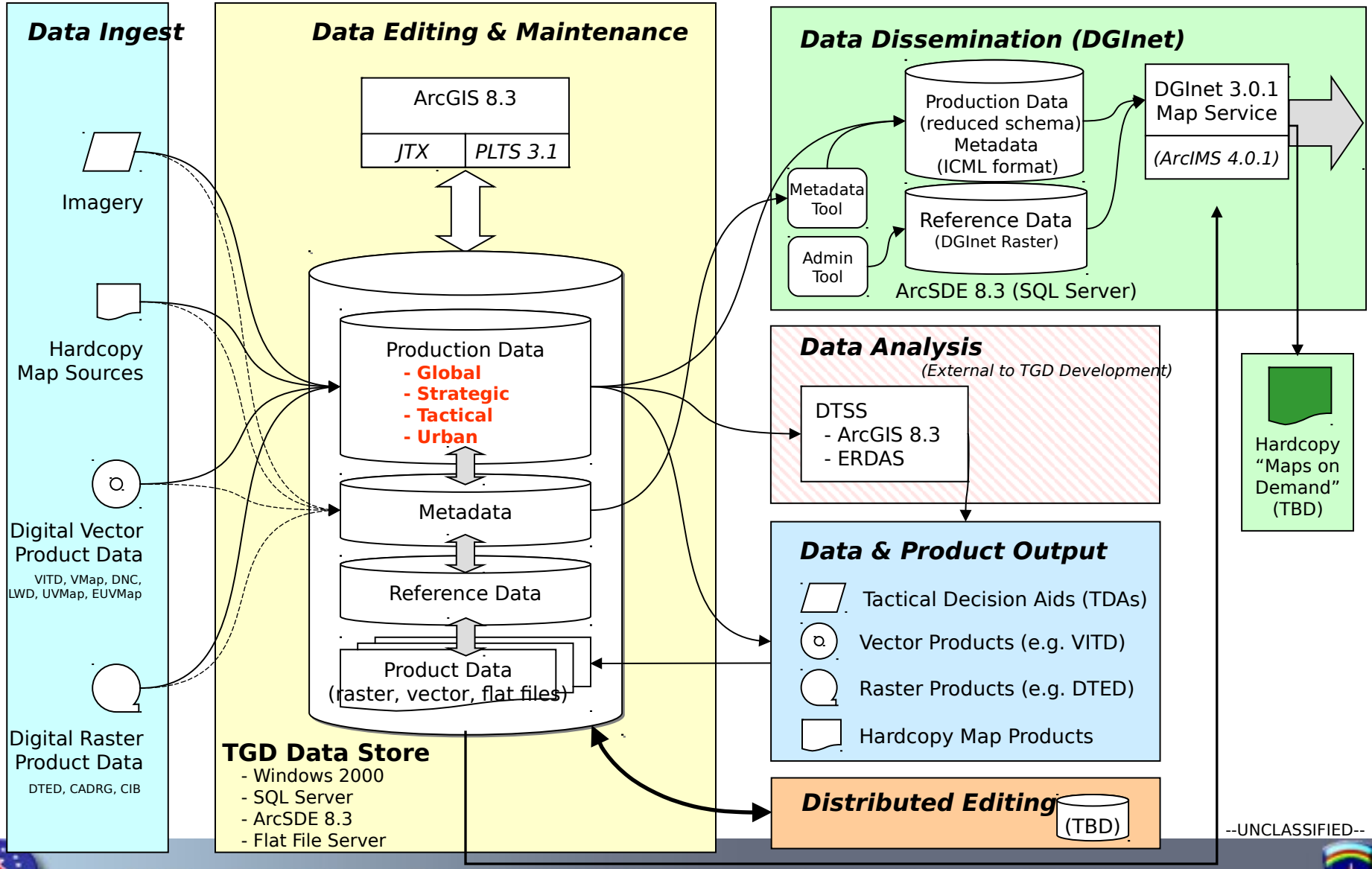
TGD Functional Architecture



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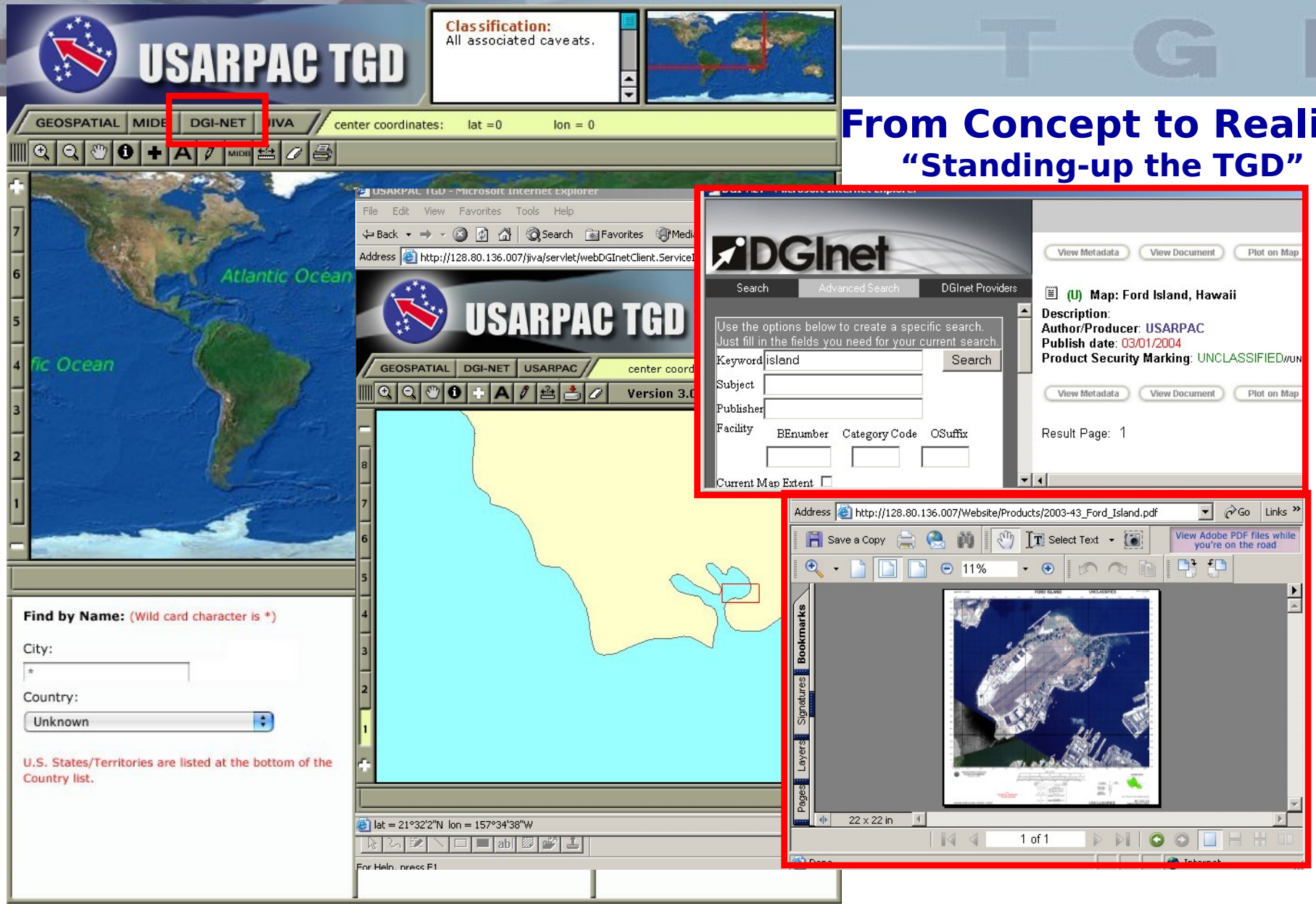
From Concept to Reality

"Standing-up the TGD"



The "Front Door" of the TGD - SIPRNET

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USARPAC

- Organization
- Personnel
- Equipment
- Software

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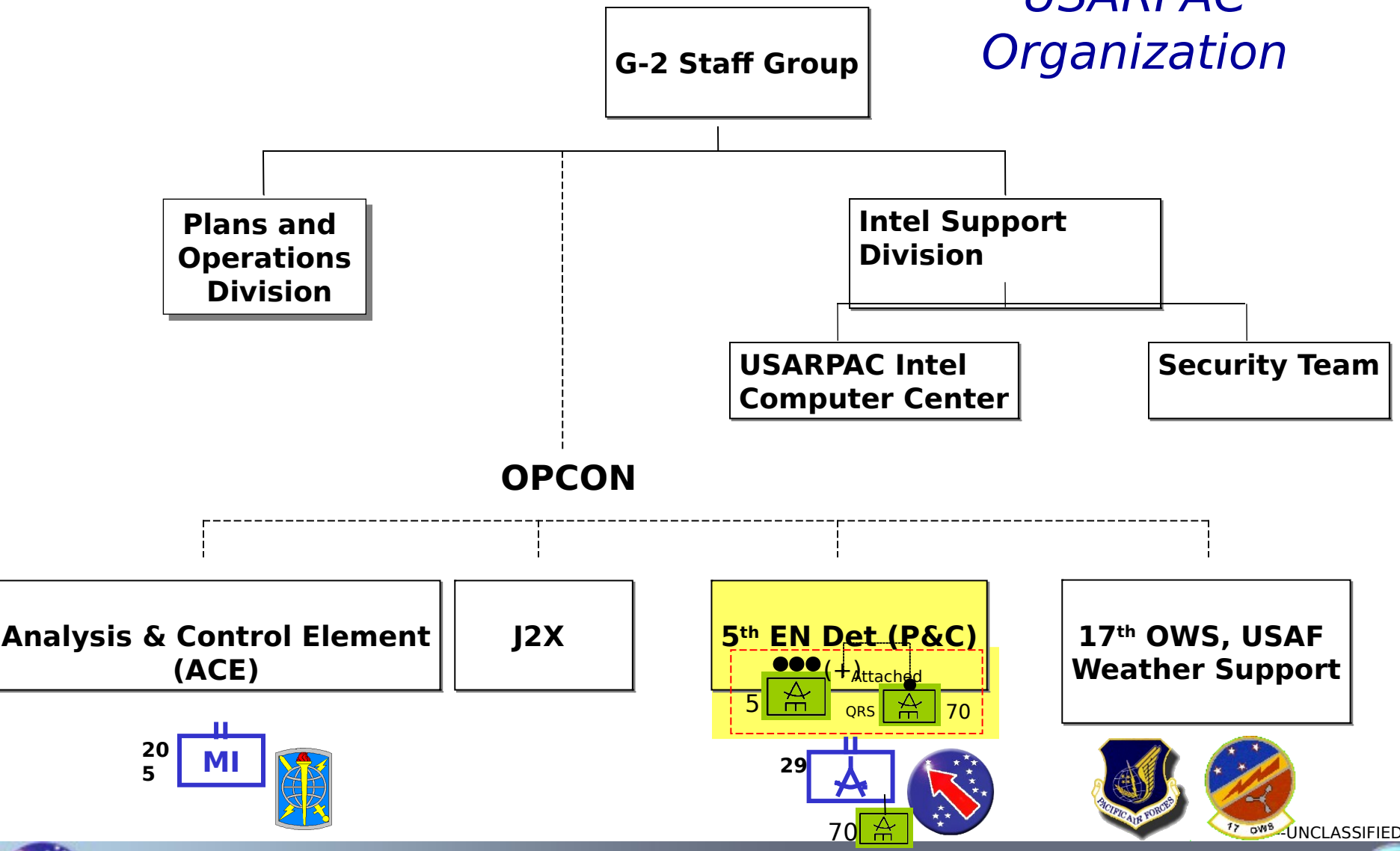
USARPAC Organization



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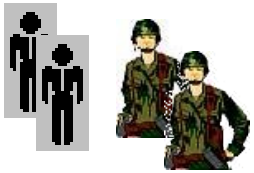
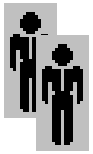
Manning the TGD

THEATER GEOSPATIAL DATABASE **MANAGER**

IMAGERY ANALYSIS SECTION	GIS ANALYSIS SECTION	DATABASE / WEBSITE SECTION
		
2 X IMAGERY ANALYSTS	**2 X GIS ANALYSTS**	**1 X Dbase STEWARD (GS) / 1 X SYSTEM ADMIN / WEB AUTHOR**

NGA Geospatial Analyst

Geospatial Technician

Skill Sets:
- PLTS
- Virtual Campus
- Smart Force
- OJT
- Network Training (DOIM)

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USARPAC Personnel

PERSONNEL

•VACANT	Topographic Engineer (O-5)
•MAJ Haefner	ATTE/OIC
•MSG Guess	Topo SGM/NCOIC (E-9)
•CPT Battaglia	Topo/Prod Officer
•CW2 Small	Geospatial Analysis Tech
•SFC Reyes	Sr. Topo Survey Sgt
•VACANT	Lithographic Ops Sgt
•VACANT	Sr. Topo Analyst
•SPC Maisal	Topo Analyst
•SPC White	Admin Clerk
•VACANT	Admin Specialist (E-4)
•GS-11, Mr. Bingue	Database Manager
•SGT Vincent	QRS NCOIC
•SPC Dickens	QRS Geo Analyst
•SPC Aomizu	QRS Geo Analyst
•PFC Herrera	QRS Geo Analyst
•Bryce Wyble	NGA Geo Analyst
•Doug Mahoney	SAIC Geo Analyst
•Adrienne Krull	SAIC Geo Analyst
•Amy Walters	SAIC Imagery Analyst
•Kevin Smith	SAIC Systems Admin

EQUIPMENT

- DTSS-Base (TGD)
- DTSS-Deployable
- 1 M998
- 3X36” Plotters
- 1X60” Plotter

NOTES:

✓ G2 provides Connectivity (NIPR, SIPR, JWICS)

AUTHORIZED: 11 X MILITARY
ASSIGNED: 7 X MILITARY

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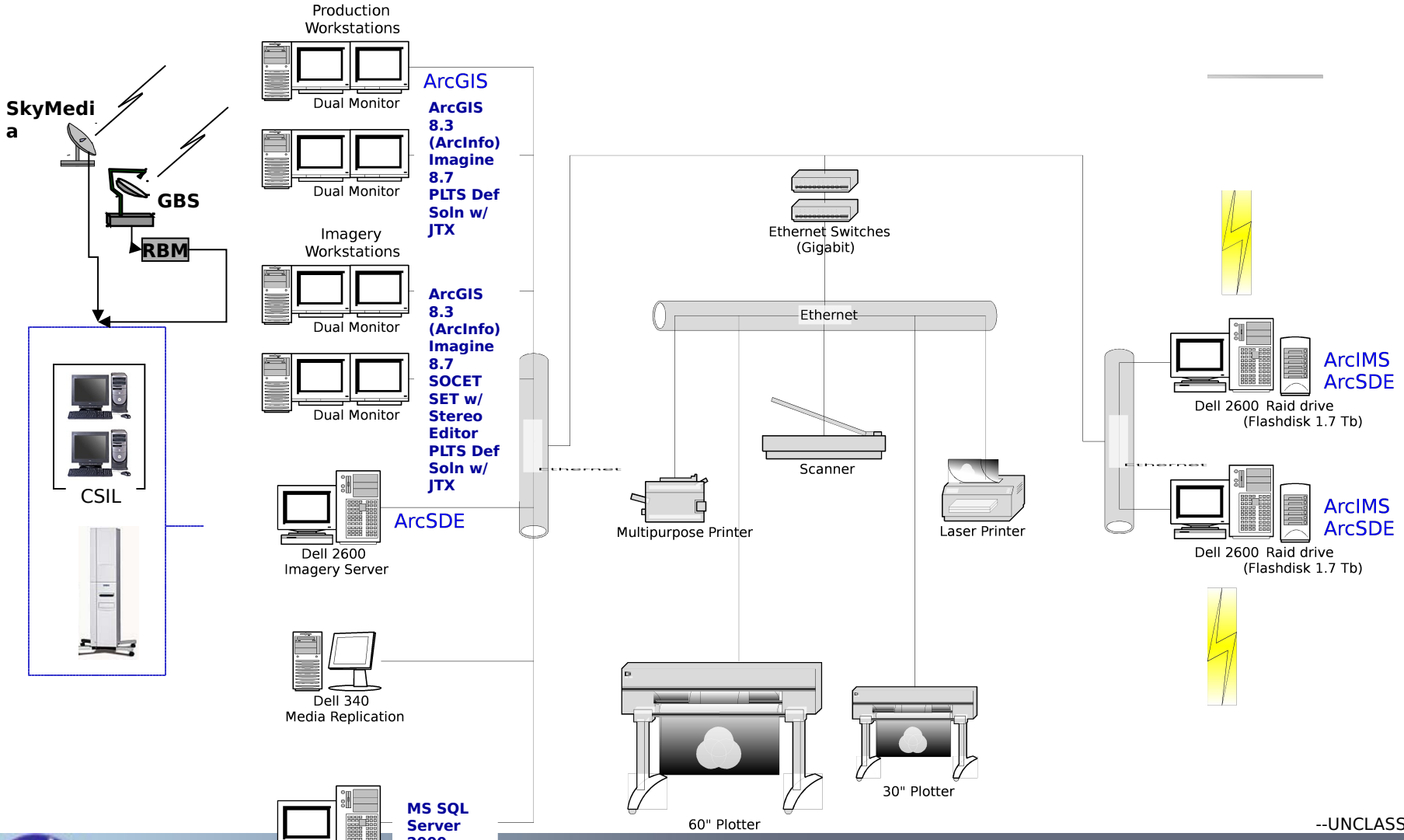
USARPAC Equipment



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TGD Concept

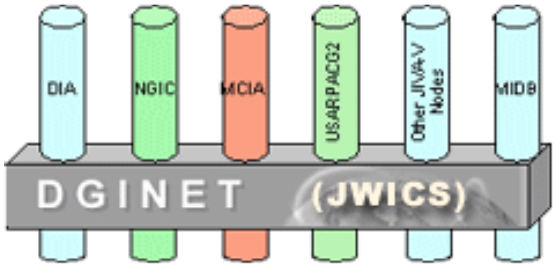
5th En Det/
USARPAC APIC/G2/Other
"Power Users"

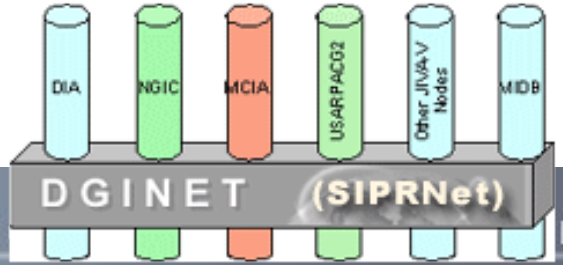
- ✓Improve and value-add data
- ✓Produce tailored products

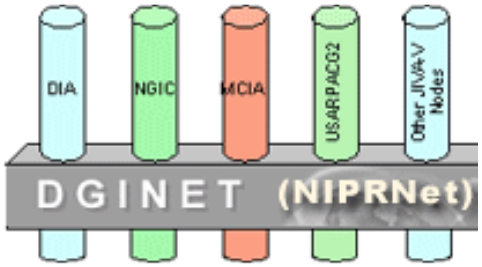
Push to JWICS

Push to SIPRNet

Push to NIPRNet







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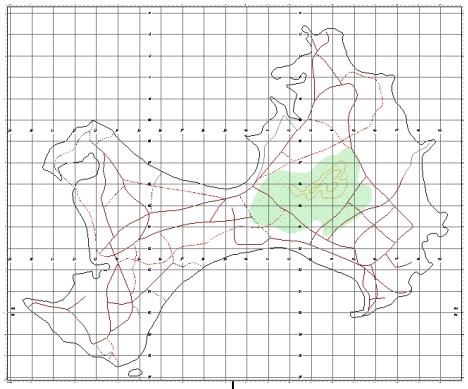
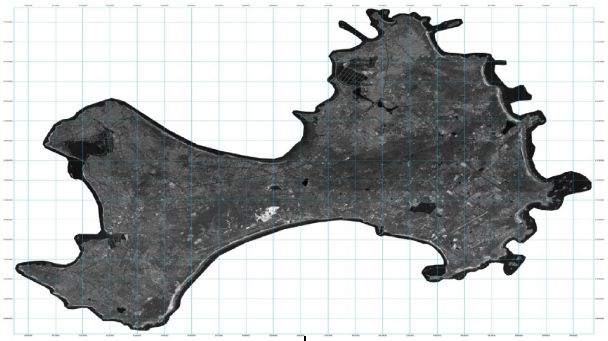
USARPAC Response to Readiness

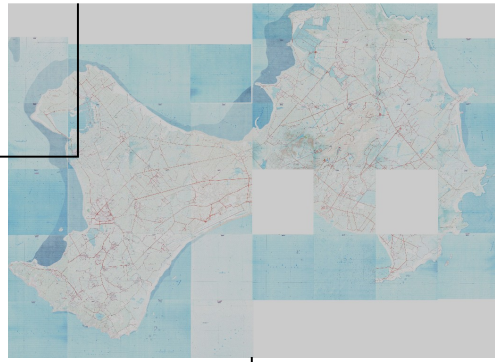
1:250,000 Scale Data (NGA)



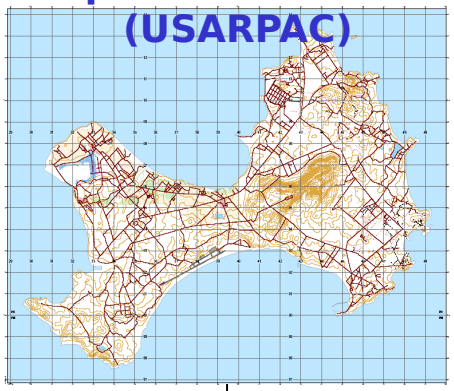
"Image Map" (USARPAC)



Nautical Charts (c. 1989, Chinese) from NGA



1:25,000 Extracted and Populated Into TGD (USARPAC)



1 Apr **2 Apr** **14 Apr** **22 Apr**

TIMELINE OF EVENTS

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USAREUR

- Organization
- Personnel
- Equipment
- Software

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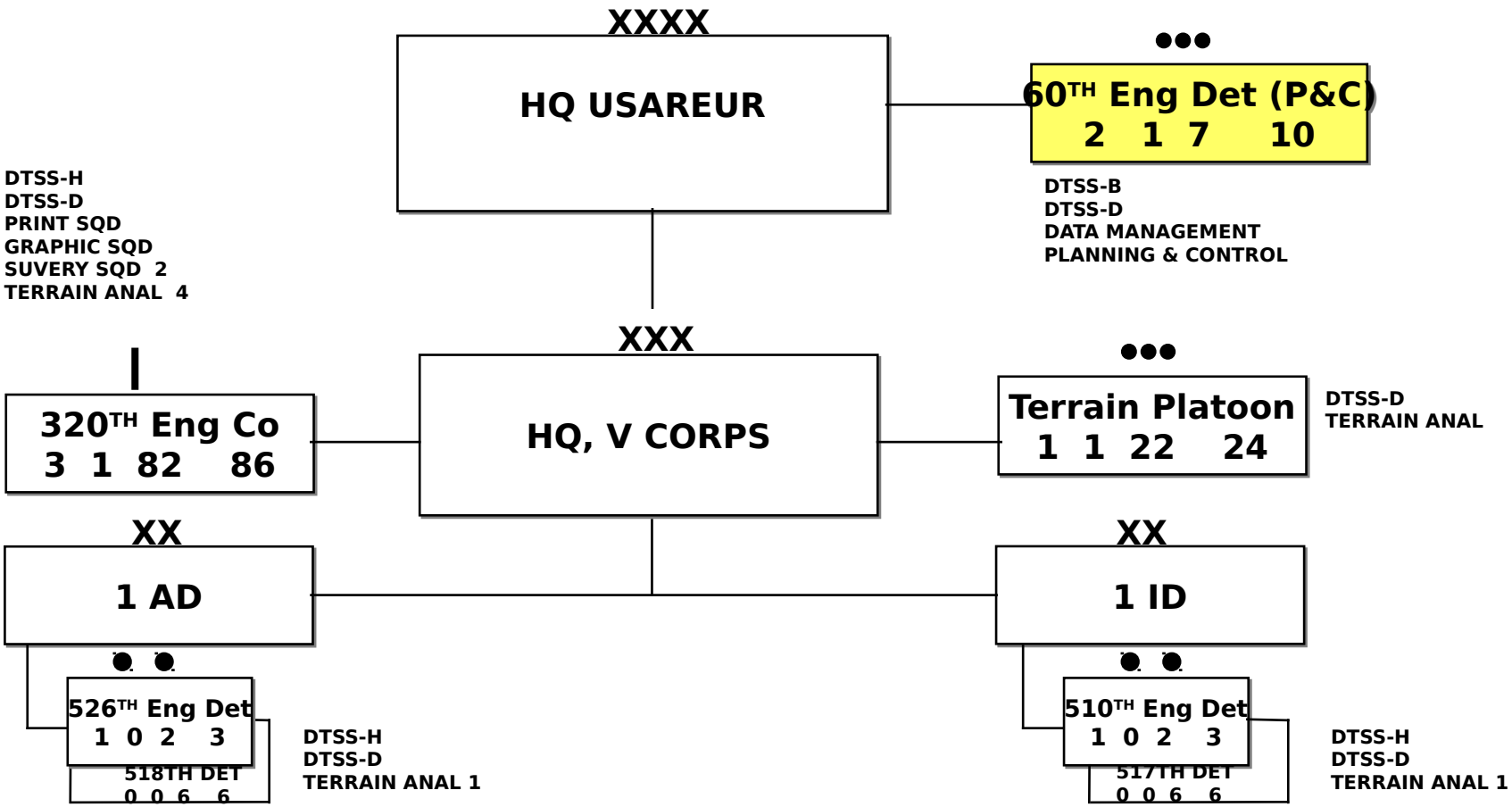
USAREUR Organization



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USAREUR Personnel

18th ENGINEER BRIGADE (TA)

CH, GI&S BRANCH
Mr. Bijeau, GS13

GEOSPATIAL ARCHITECTURE
Mr. Yaryan, GS13 (SPAWAR)

GEOSPATIAL TEAM, SETAF
Ms. Frick, NGIT
Mr. Bonnette, NGIT (Sep 04)

60th ENGINEER DETACHMENT (P&C)

PLANNING AND CONTROL/ OPERATIONS
- Vacant, GS12
- CW2 Cossell, 215D
- SFC Heitkamp, 21S
- SSG Dela Rosa, 21S

IMAGE PROCESSING
- Mr. Walker, GS11
- SFC Bonnette/Ali, 21U
- PFC Rhodes, 21U
- Ms. McVicker, NGIT

DATA EXTRACTION
- Vacant, GS12
- Mr. Wright, GS11
- SGT Adams, 21U
- PFC Rhodes, 21U
- SPC Gobble, 21U
- SPC Plicka/Behnken
- Mr. Livingood, NGIT
- Mr. Ryska, NGIT
- Vacant, NGIT

DATA FINISHING
- Mr. Finney, GS11

REPRODUCTION/ DISTRIBUTION
- Mr. Albiez, IC-05

INFORMATION TECHNOLOGY

WEB DESIGN/SYSTEM ADMINISTRATION
Mr. Cornell, GS12
Mr. Strahan, EDS

DATABASE MANAGEMENT/ADMINISTRATION
Cartographer, GS07

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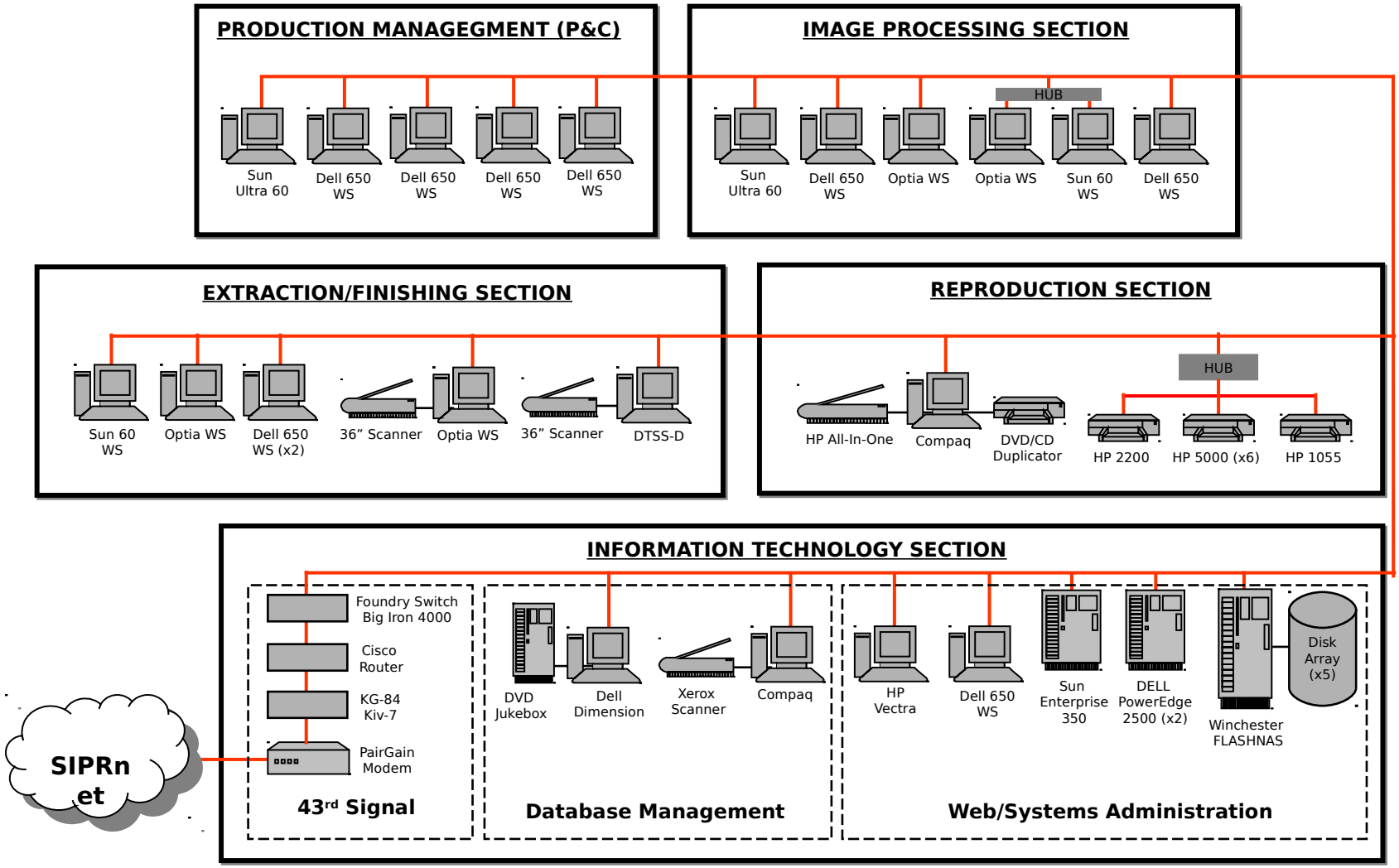
USAREUR Equipment



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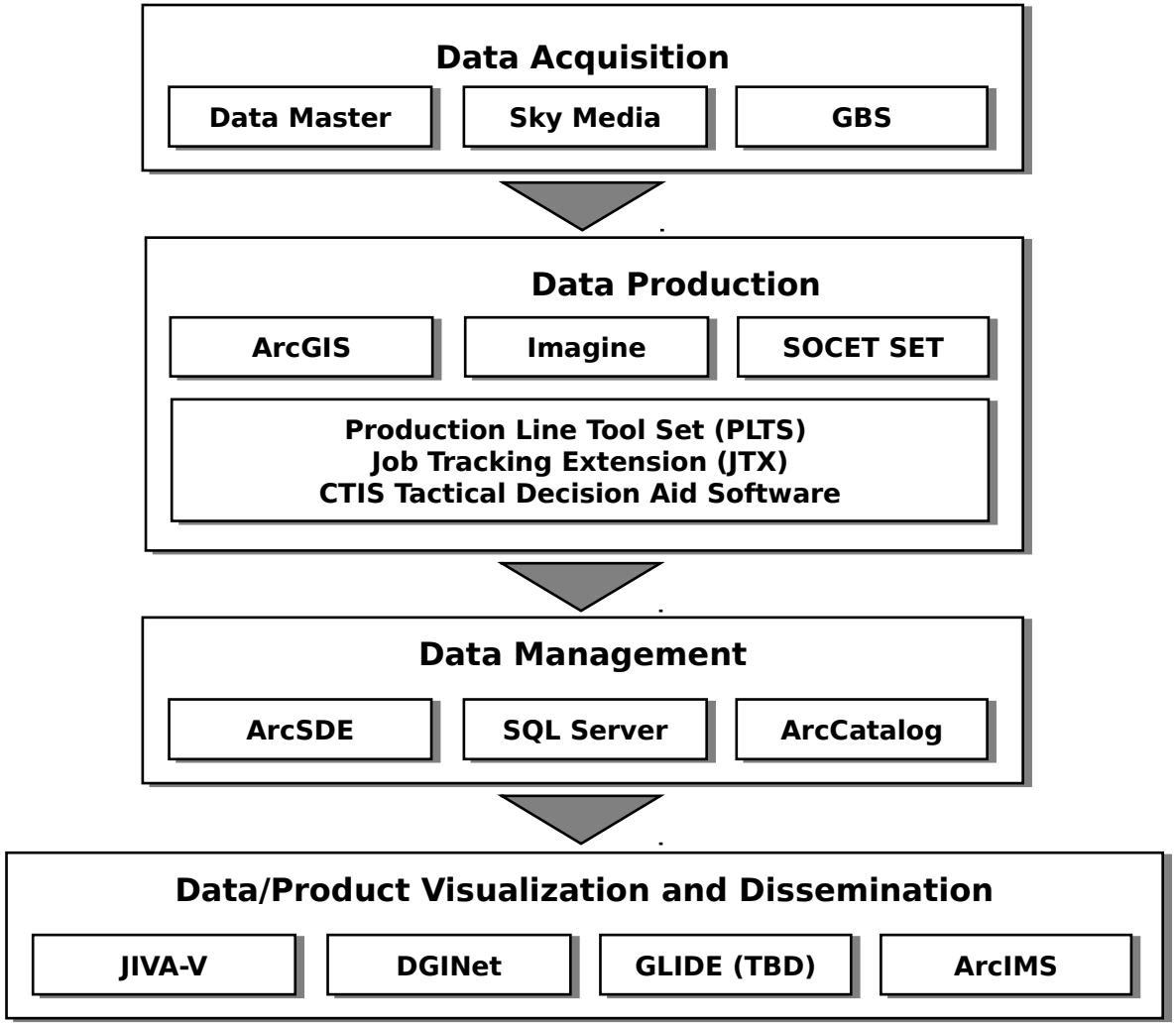
TGD Software



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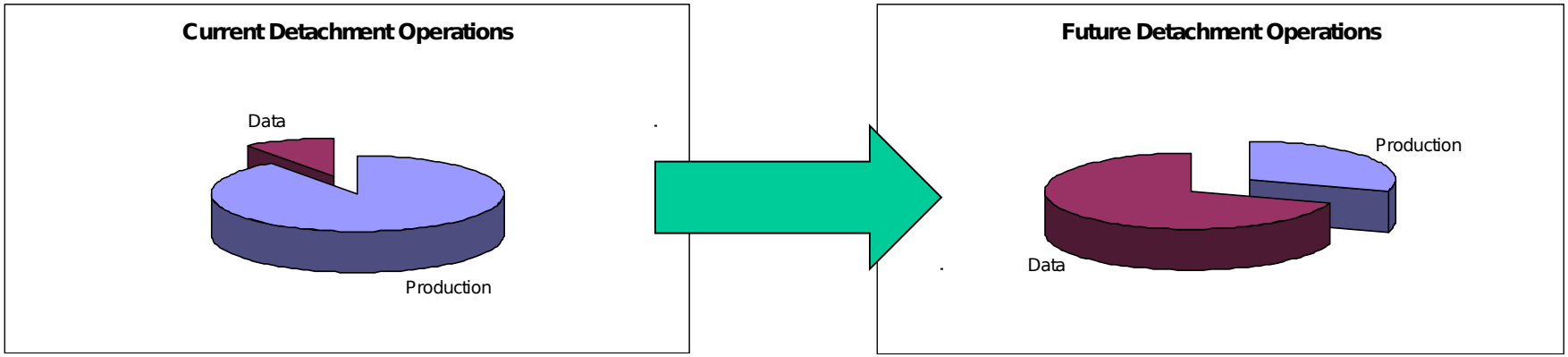
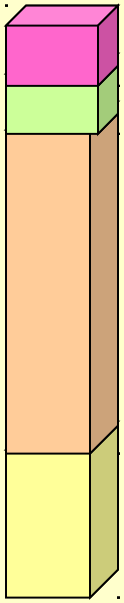
Skills Assessment



P&C (GPC) Required Skills



Joint/Interagency

ASCC

Detachment

MOS

- Acquire and Prepare Imagery Sources for Feature Extraction (stereo- or monoscopic)
- Create/Modify/Use Valid Value Tables/Knowledgebases for Symbolization and QC
- Establish Basic Network Configurations
- Ingest NGA-standard and Non-standard Data Into Spatial Geodatabases
- Load/Install software
- Manage Distributive Databases

- Modify/Use Cross-Reference Databases
- Perform Systems Administration and Basic Software and Hardware Troubleshooting
- Perform/Supervise Feature Extract Using Predefined Specification
- Run Topology, Consistency, and Logic QC on Geodatabase
- Tune/Maintain Enterprise Database (MS SQL)
- Version Geodatabases

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TGD FY04 Funding

	USAREUR	USARPAC
• Initial Development	$600K	$300K
• USAREUR TGD G2 Enhancements	$150K	
• Geospatial Analysts (4+3)	$572K	$450K
• Systems Engineer	$175K	$150K
• Web Designer	$170K	
	$1,667K	

$900K

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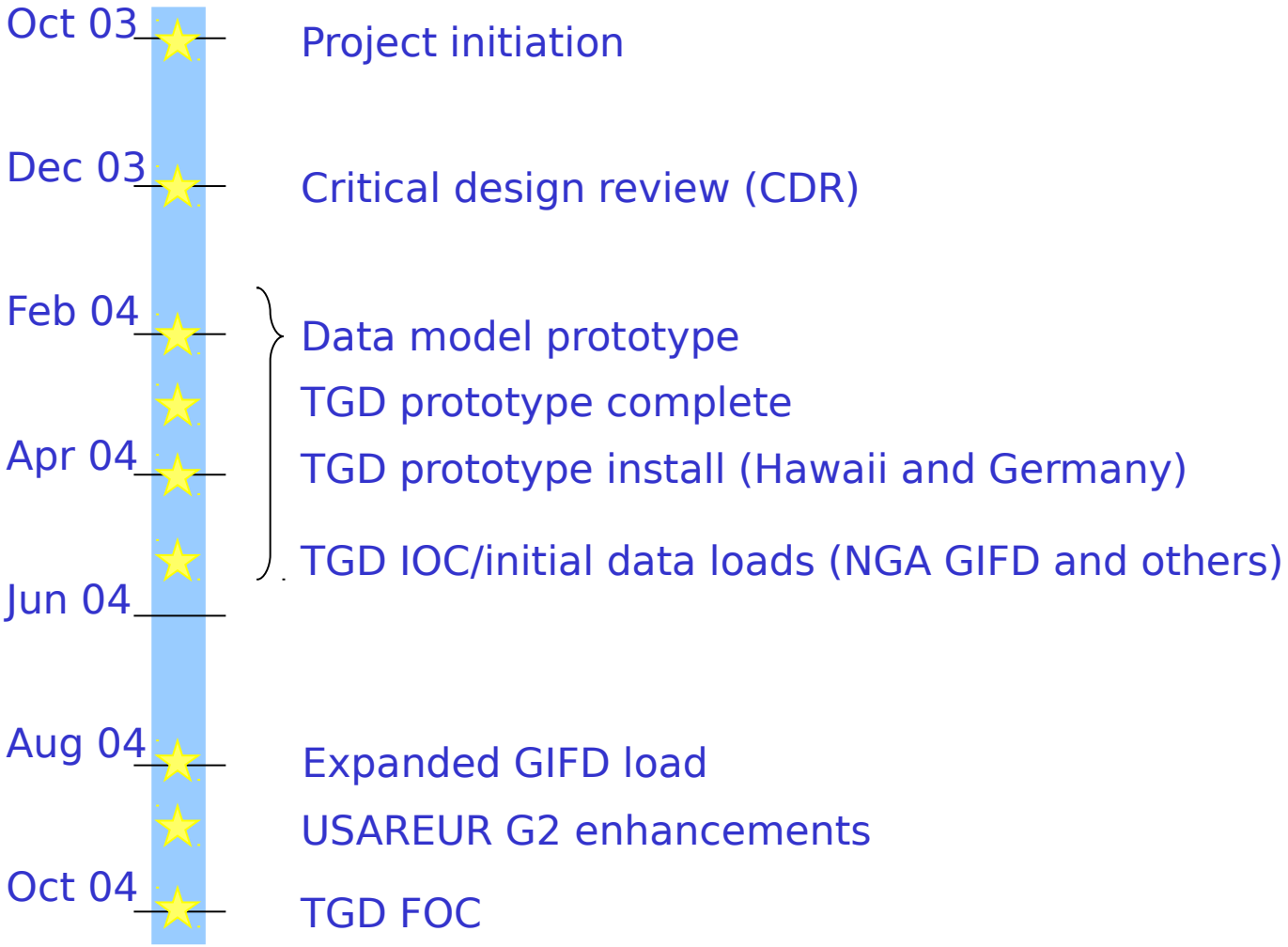
Execution Plan



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Further TGD Development

- Establish Baseline 1.0 TGD data model
- Continue “fixing” prototype tools (i.e., PLTS, JTX, JIVA-V, etc.)
- Extending the data model
- Additional server side tools (ArcServer 9)
- Tracking server
- Automatic feature extraction
- Stereo extraction integrated into PLTS

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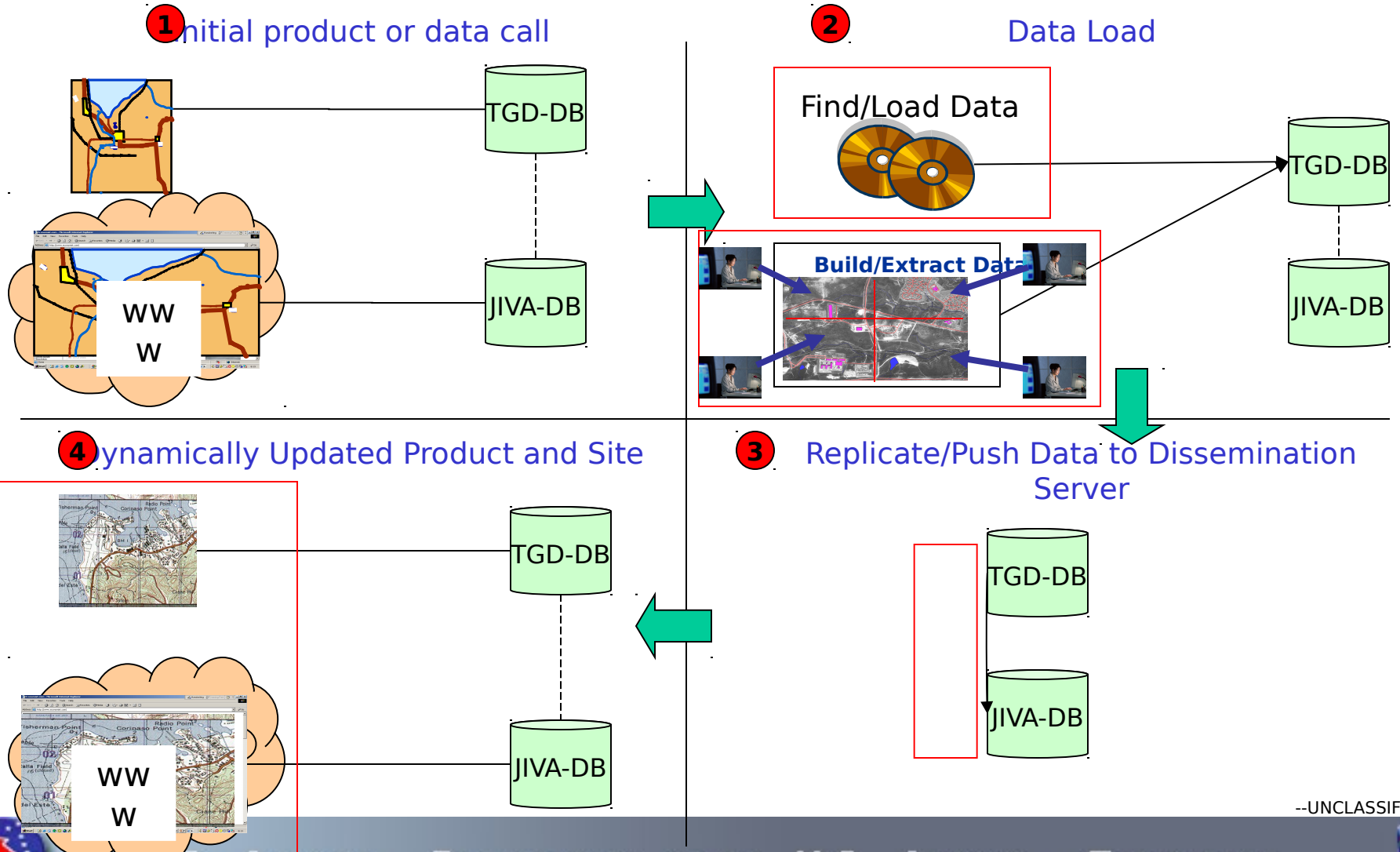
TGD "Value Adding"



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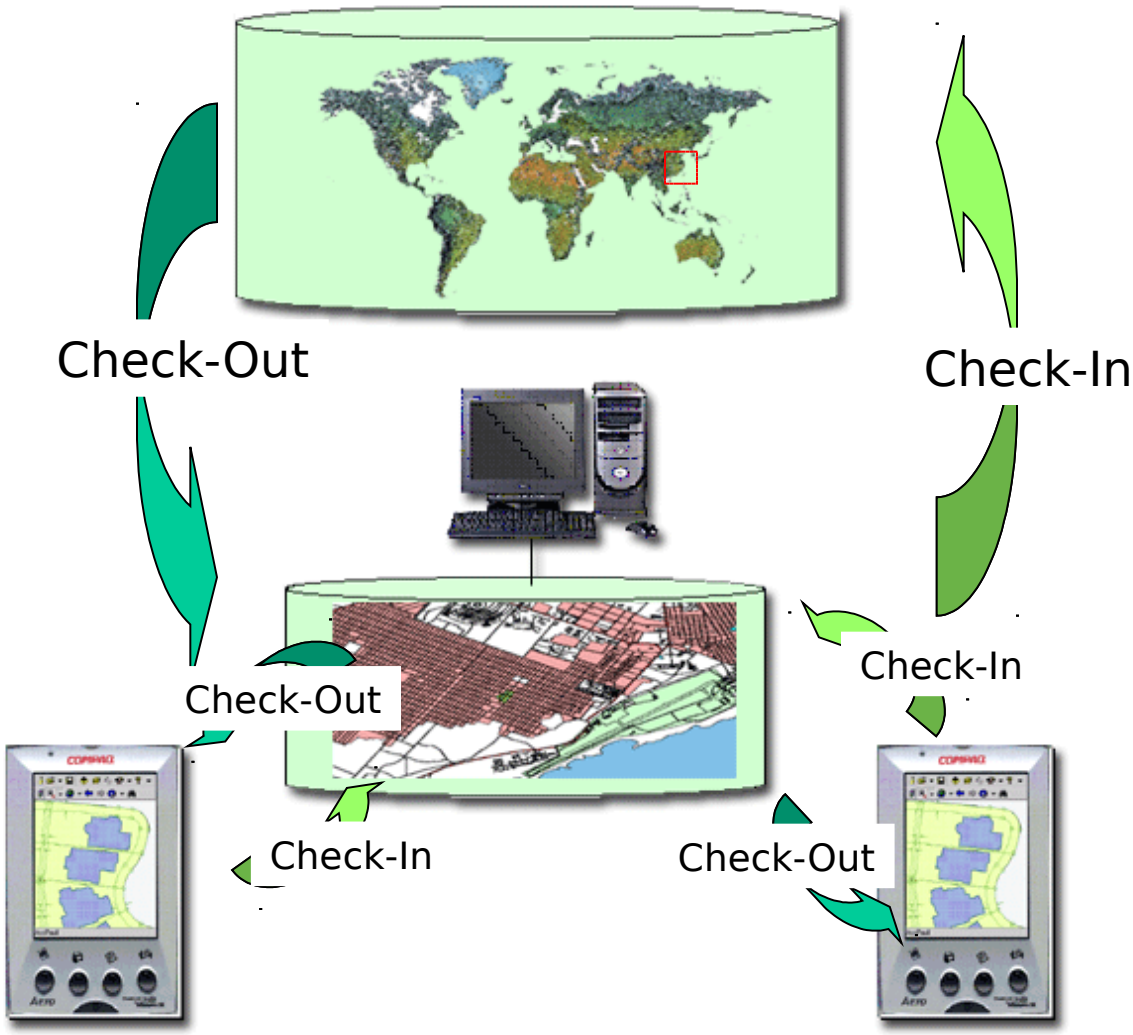
Disconnected Editing

TGD forms Initial “map” baseline

Checkout mission dataset

Check-outs To individual ArcPad devices



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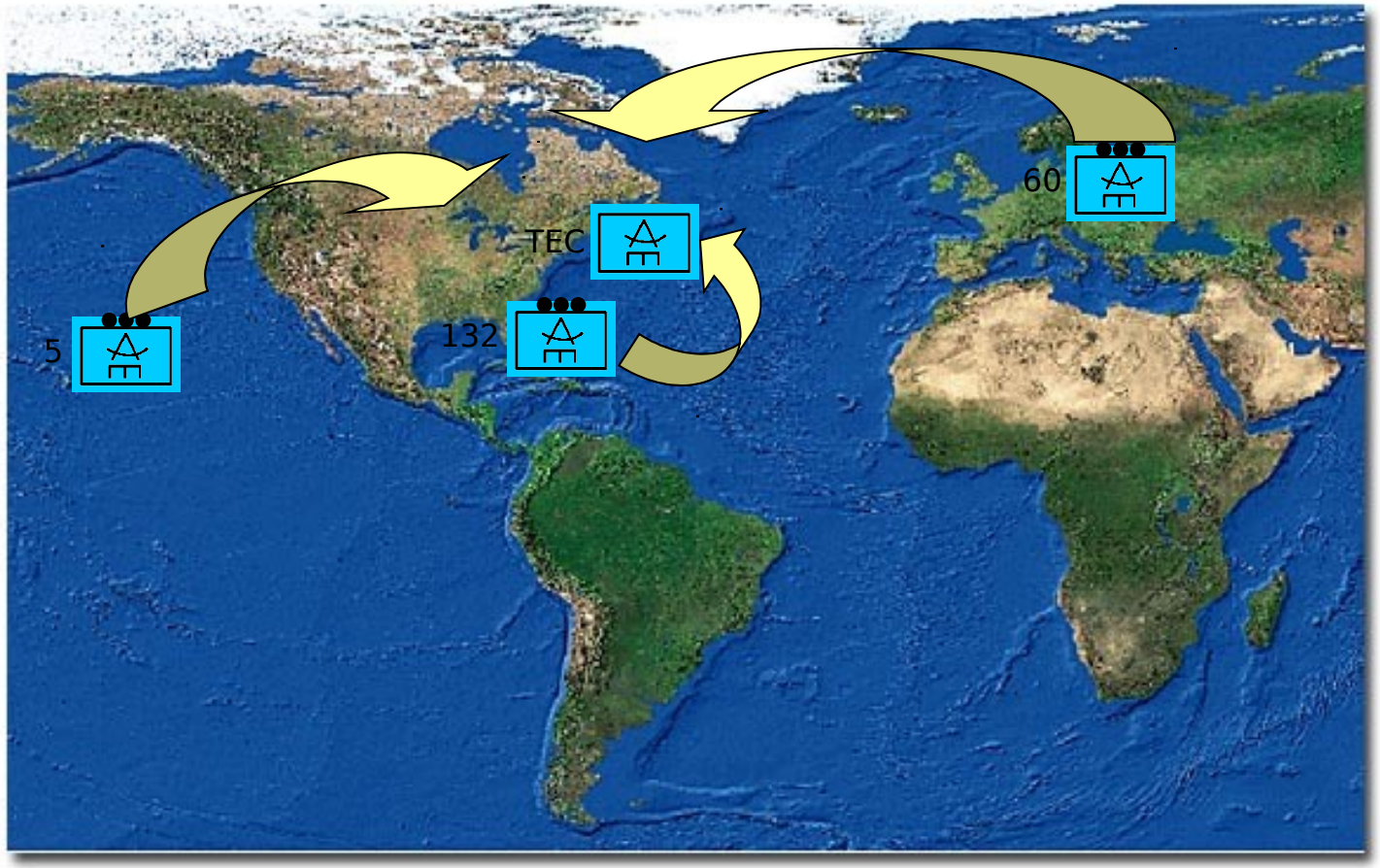
Offsite Storage



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Conclusion

- In theater production capability
- Not replacing NGA (we still have production requirements!!)
- Look forward to USARCENT participation
- Operational Benefits
- Extracts & Versioning
- Provisions for offsite storage
- In theater production capability

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Points of Contact

USAREUR

Ronald W. Bijeau	**Ch, GI&S Branch**	**DSN: 314-370-7202**
CW2 Jim Cossell	**60th En Det (P&C)**	**COM: 011-49-(0)6221-57-7202**
CW3 Dave Kasten	**USAREUR GI&S Officer**	**NIPRNet: ronald.w.bijeau@us.army.mil**
		SIPRNet: ronald.bijeau@dcsops.hqusareur.army.smil.mil
		TGD DGInet (SIPRnet): http://tgd.60engdet.hqusareur.army.smil.mil/jiva/start.html

USARPAC

MAJ Jack Haefner	**USARPAC GI&S Officer**	**DSN: 315-438-7502**
/MAJ Nathan Rainey	**5th En Det (P&C)**	**COM: 808-438-7502**
(incoming)		**NIPRnet: haefnerjh@shafter.army.mil**
		SIPRnet: haefnerjh@shafter.army.smil.mil
		TGD DGInet (SIPRnet): http://128.80.136.007/jiva/start.html

CENTCOM/NORTHCOM/FORSCOM

MAJ David Foster	**132d En Det**	**DSN: 797-7218**
Peter Swan	**FORSCOM GI&S Officer**	**COM: 404-469-7218**
		SIPRnet: laintdaf@force1.army.smil.mil
		https://freddie.forscom.army.mil/G2-132ndEng/default.htm

TEC

Denise Hovanec	**TEC TGD Lead**	**DSN: 328-6759**
		COM: 703-428-6759
		NIPRnet: denise.hovanec@usace.army.mil

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Backup Slides

Challenges With Current NGA Data

- Vmap→FFD→VITD Spec
- Unified Data Profile (2122 Feature Categories)
- FACC (6061 possible attribution schemes)
- SDSFIE
- GIFD

VMap1	FFD	VITD
ID	Id	ID
F_CODE	f_code	F_CODE
BDC	exs	BCC
BOT	len (m)	BRN
BSC	tuc	EXS
EXS	wd1 (dm)	LC1 (t)
LEN		LC2 (t)
OHB (m)		LC3 (t)
TUC		LC4 (t)
ZV2 (m)		LEN (m)
		NOS
		OHC (dc)
		TUC
		UBC (dm)
		WD1 (dm)

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USAREUR Challenges

- **Continuity of Operations Plan (COOP) Site Storage**
- **Maintain a synergistic relationship between the Engineer and Intelligence staff**
- **Upgrade inter/intra communication networks**
- **Develop capability to “push” data to JWICS**
- **No POM funding for TGD sustainment**
- **No established process for reconciling databases with tactical units and NGA**

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TGD INTEROPERABILITY

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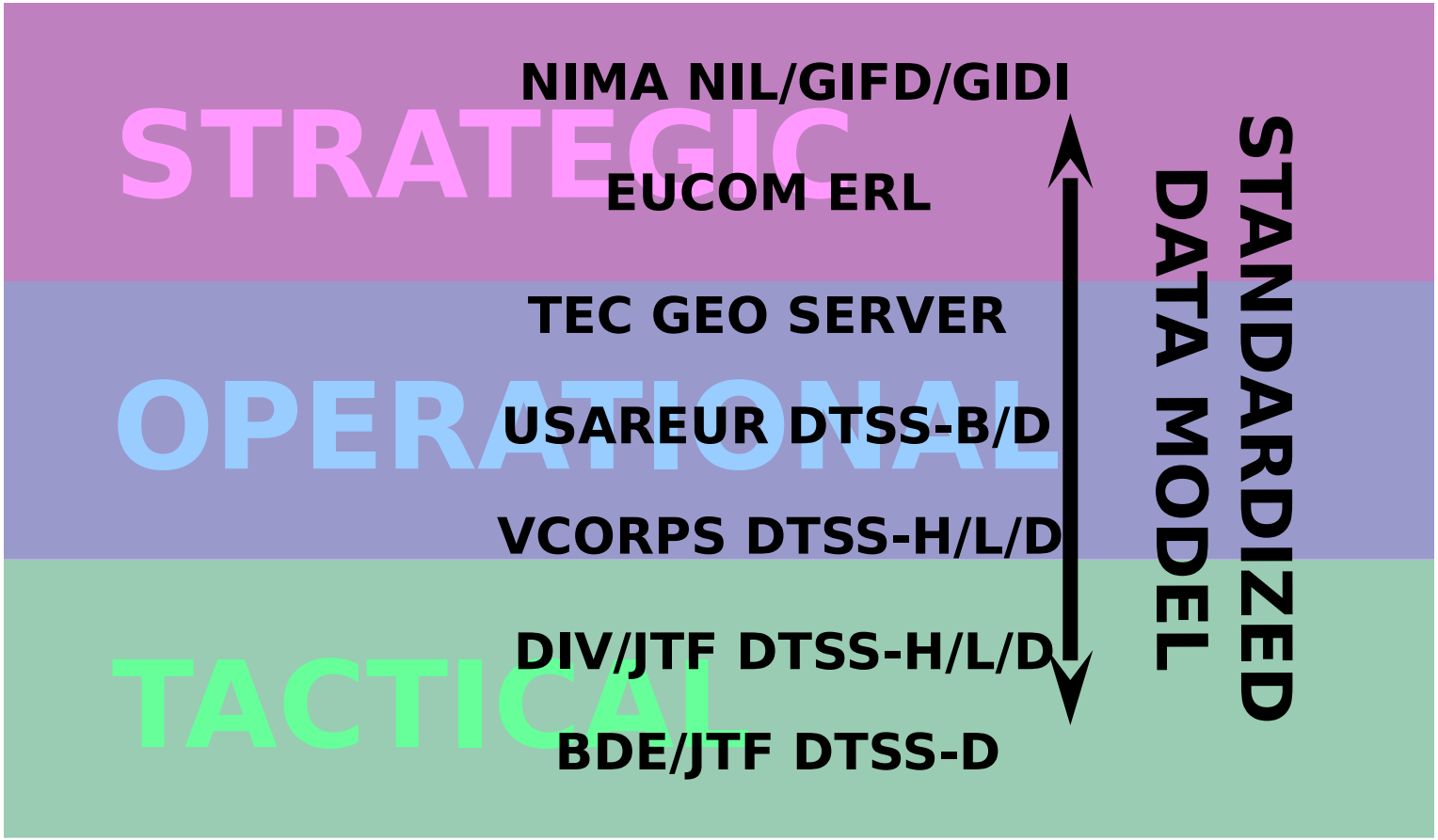
A STANDARDIZED DATA MODEL WILL HELP CAPTURE AND DISSEMINATE THEATER VALUE ADDED DATA



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TGD Funding

- **Startup Development Cost:**
  - **USAREUR DCSENG/18th Eng Bde $600K**
  - **USAREUR G2 $150K**

- **Personnel Cost (Previously Existing):**
  - **Geospatial Analysts (2) $286K**
  - **Geospatial Systems Architect $175K**
  - **Web Designer $170K**

- **Sustainment:**
  - **SW/HW Maintenance $50K**
  - **Supplies**

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REFERENCES

- **ARMY FIELD MANUAL 3-34.230** ***[DATA MANAGEMENT]***
- **FUTURE COMBAT SYSTEM ORD (AS OF 30 AUG 02)** ***[GENERAL REQUIREMENT]***
- **UNIT OF ACTION ORGANIZATION AND OPERATION PLAN (AS OF 22 JUL 02)** ***[INFORMATION]***
- **UNIT OF EMPLOYMENT ORGANIZATION AND OPERATION PLAN (AS OF 10 JULY 02)** ***[KNOWLEDGE]***
- **BATTLE COMMAND ORGANIZATION AND OPERATION CONCEPT PLAN** ***[COMMANDER DRIVEN & MISSION ORDERS]***
- **DISTRIBUTED COMMON GROUND SYSTEM-ARMY ORD (DRAFT)** ***[GEOSPATIAL INFORMATION]***
- **NIMA STRATEGIC INTENT** ***[COMMON, DIGITAL, GEOSPATIALLY REFERENCED FRAMEWORK]***

GEOSPATIAL INFORMATION IS KEY TO FUTURE SYSTEMS!

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BACKGROUND

- DTSS-B WILL BE FIELDED TO THEATERS (29TH ENG BN, 30TH ENG BN AND 60TH ENG DET) IN FY03
- GEOSPATIAL DATA CREATION AND MANAGEMENT IS A KEY FUNCTION OF THE DTSS-B
- DTSS-B WILL USE INFORMIX AS ITS RELATIONAL DATABASE MANAGEMENT SYSTEM
- ESRI ARC PRODUCTS WILL PROVIDE THE FUTURE DEVELOPMENT PLATFORM/ENVIRONMENT
- THE CAPABILITY TO UPDATE AND/CONFLATE DATA BETWEEN ECHELONS WILL BE REQUIRED
- CIVILIANS (GS OR CONTRACTOR) WILL BE REQUIRED TO PROVIDE CONTINUITY

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ASSUMPTIONS

- NEW TECHNOLOGIES IN MAINTAINING DATA TOPOLOGY WILL FACILITATE DATA CONFLATION AND UPDATING IN THE FUTURE
- IMAGERY WILL BE AVAILABLE FROM INTELLIGENCE SOURCES TO SUPPORT GEOSPATIAL DATA EXTRACTION
- ROBUST COMMUNICATIONS WILL BE REQUIRED
- STANDARD DATA FORMAT IMPORT AND EXPORT SOFTWARE WILL BE REQUIRED TO SUPPORT LEGACY SYSTEMS (I.E., VPF, RPF, DTED, ETC.)
- STANDARD SYMBOLIZATION AND RENDERING SOFTWARE WILL BE REQUIRED
- DATABASE MANAGEMENT TRAINING WILL BE REQUIRED
- ADDITIONAL PERSONNEL WILL BE REQUIRED

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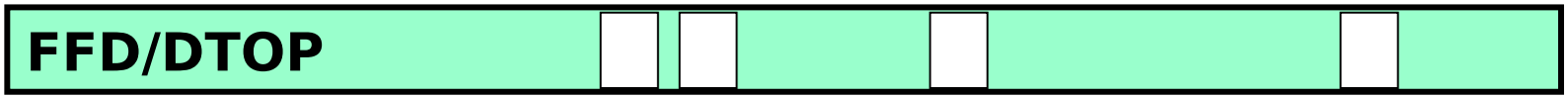
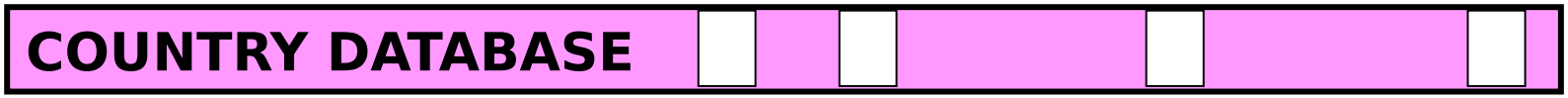
DATA MODEL CONTENT



???

- FFD/DTOP MISSING FEATURES
  - ELEVATION CONTOUR LINES
  - SPOT ELEVATIONS



???

- COUNTRY DATABASE (CDB) MISSING FEATURES
  - HELIPORT, COMPLEX OUTLINE
- SHAPE FILES LACK TOPOLOGICAL STRUCTURE

!!!

- TGD INCLUDES ALL AVAILABLE FEATURE DATA
  - NIMA GEOSPATIAL INTELLIGENCE FEATURE DATA (GIFD SOILS, VEG, LAND CLASS, DTED, CIB
  - THEATER UNIQUE DATA (I.E., B.E. NUMBERS)

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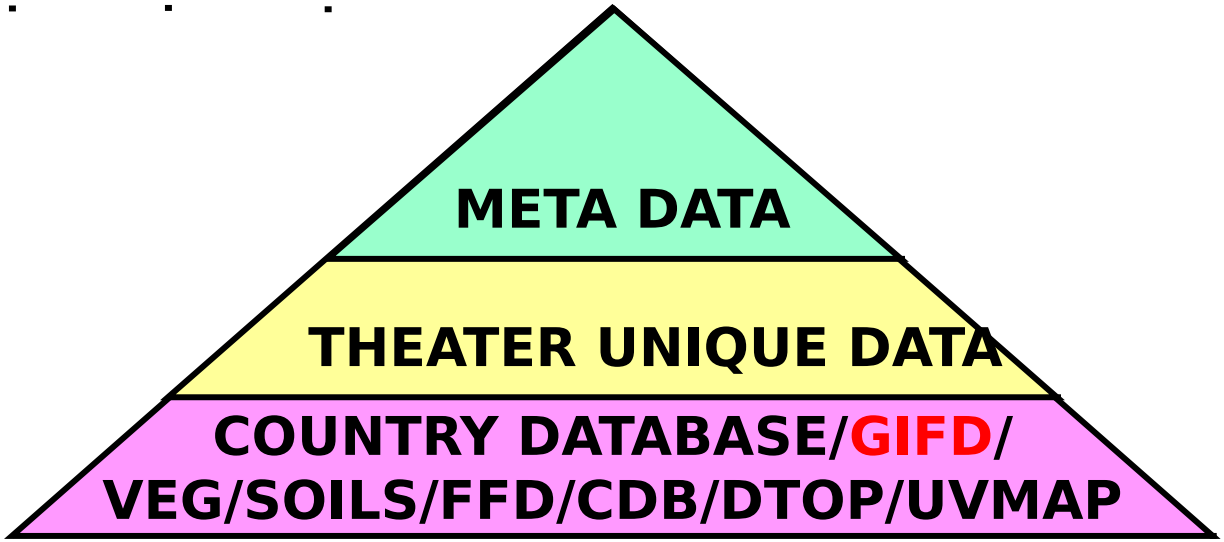
CONCEPTUAL DATA MODEL



- DEFINES THE FRAMEWORK OF FEATURES/ATTRIBUTES
  - REQUIRED FOR ALL OPERATIONAL MISSIONS
- USE GIFD/VEG/SOIL/LAND CLASS/UVMAP DATA CONTENT
  - SPECIFICATION AS STARTING POINT
- ADD THEATER/JOINT UNIQUE DATA REQUIREMENTS
- FEATURE ATTRIBUTE CODING CATOLOG (FACC) WILL BE
  - THE INITIAL STANDARD
- SHOULD BE APPROVED BY THEATER SUBJECT

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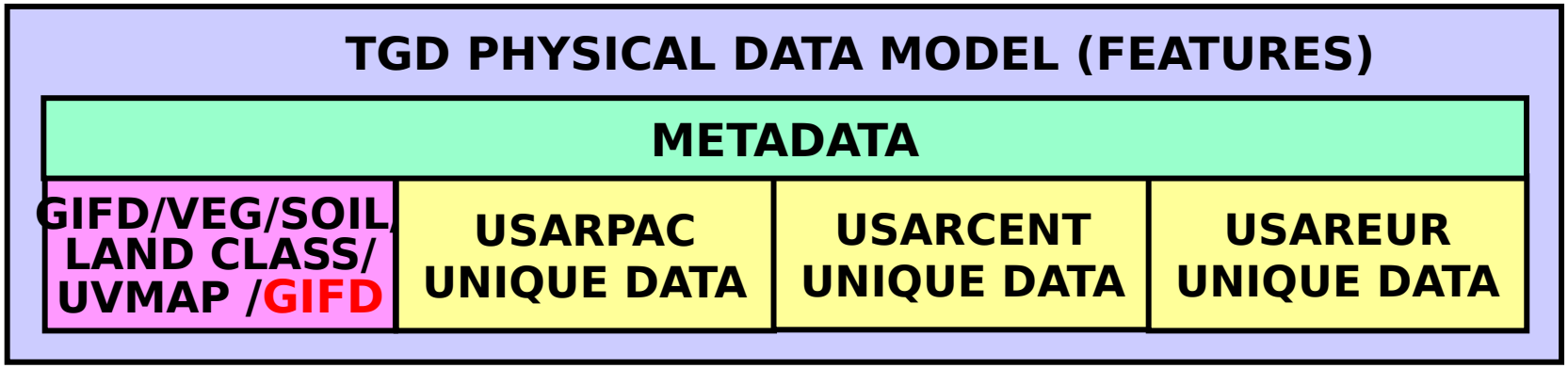
PHYSICAL DATA MODEL



- DEFINES THE PHYSICAL DATA STRUCTURE ON THE SYSTEM (I.E., DTSS-B, GIL, GIPL, ETC.)
- ASSURES INTEROPERABILITY BETWEEN THEATERS/NIMA
- ADDRESSES THEATER UNIQUE DATA REQUIREMENTS
- ALLOWS DENSIFICATION OF STANDARD NIMA DATASETS WITH TACTICAL-SCALE VALUE-ADDED DATA
- SCALEABLE - DATA MODEL CAN BE EXPANDED TO ADDRESS OTHER DATA IN THE FUTURE (I.E., COMMON DATA MODEL FRAMEWORK, ETC..)

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CONCLUSION

- THE ARMY'S OBJECTIVE FORCE CONCEPT AND NIMA'S STRATEGIC INTENT AND NSGI CONCEPTS ARE NOT POSSIBLE WITHOUT A STANDARDIZED COMPREHENSIVE TGD TO CAPTURE CRITICAL VALUE-ADDED DATA
- ALL COMBATANT COMMANDERS AND THEIR ARMY COMPONENT SHOULD ADOPT THE TGD CONCEPT AS AN INTERIM SOLUTION UNTIL A MORE PERMANENT SOLUTION IS DEVELOPED BY NIMA
- THE TGD WILL PROVIDE A STANDARD AND SCALEABLE DATA STRUCTURE THAT WOULD GREATLY ENHANCE CURRENT AND FUTURE CAPABILITIES
- EXISTING NIMA STANDARD AND QUALIFIED DATASETS WOULD FORM THE "FOUNDATION" OF THE TGD
- COMMERCIAL-OFF-THE-SHELF SOFTWARE COULD BE USED TO PROVIDE THE REQUIRED DATABASE AND PRODUCTION MANAGEMENT TOOLS
- A FULLY FUNCTIONING TGD AND SOFTWARE TOOLS COULD BE DEVELOPED ON THE DTSS-B WITHIN ONE YEAR

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RECOMMENDATION

- ALL ARMY THEATERS, TEC, USAES AND NIMA SHOULD FORM A TEAM TO DEVELOP THE TGD
  - DEVELOP A STANDARD COMPREHENSIVE CONCEPTUAL AND PHYSICAL DATA MODEL BASED ON THE NIMA GIFD AS A MINIMUM
  - DEVELOP STANDARD METADATA PROFILES AND EXTENTIONS
  - TAKE ADVANTAGE OF EXISTING COTS SOFTWARE APPLICATIONS (I.E., PLTS, JTX, ETC.)
- SUBMIT THE TGD CONCEPT TO NIMA AS AN ARMY REQUIREMENT WITH SPONSORSHIP FROM EUCOM/PACOM
- DEVELOP A RAPID PROTOTYPE PROGRAM (ICW TEC/NIMA) TO INTEGRATE THE TGD INTO SYSTEM ARCHITECTURES (I.E., DTSS, GIL, GIPL, ETC.) WITHIN ONE YEAR
- RECOMMEND NIMA PROVIDE RESOURCES FOR THE DEVELOPMENT AND IMPLEMENTATION OF THE TGD (IAW STRATEGIC INTENT AND NSGI CONCEPT) ON THE DTSS-B

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CONTACT INFORMATION

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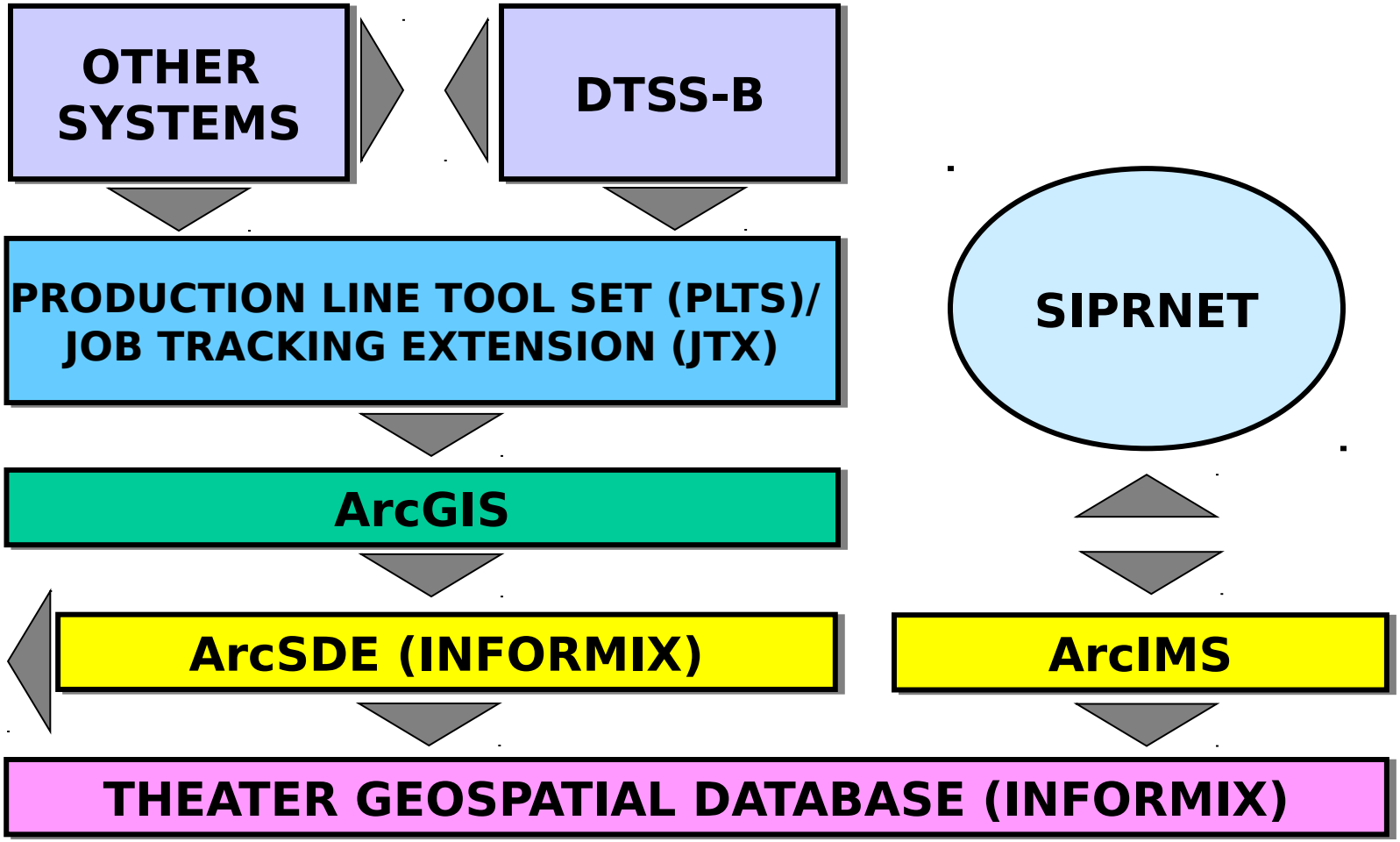
TGD SOFTWARE ARCHITECTURE



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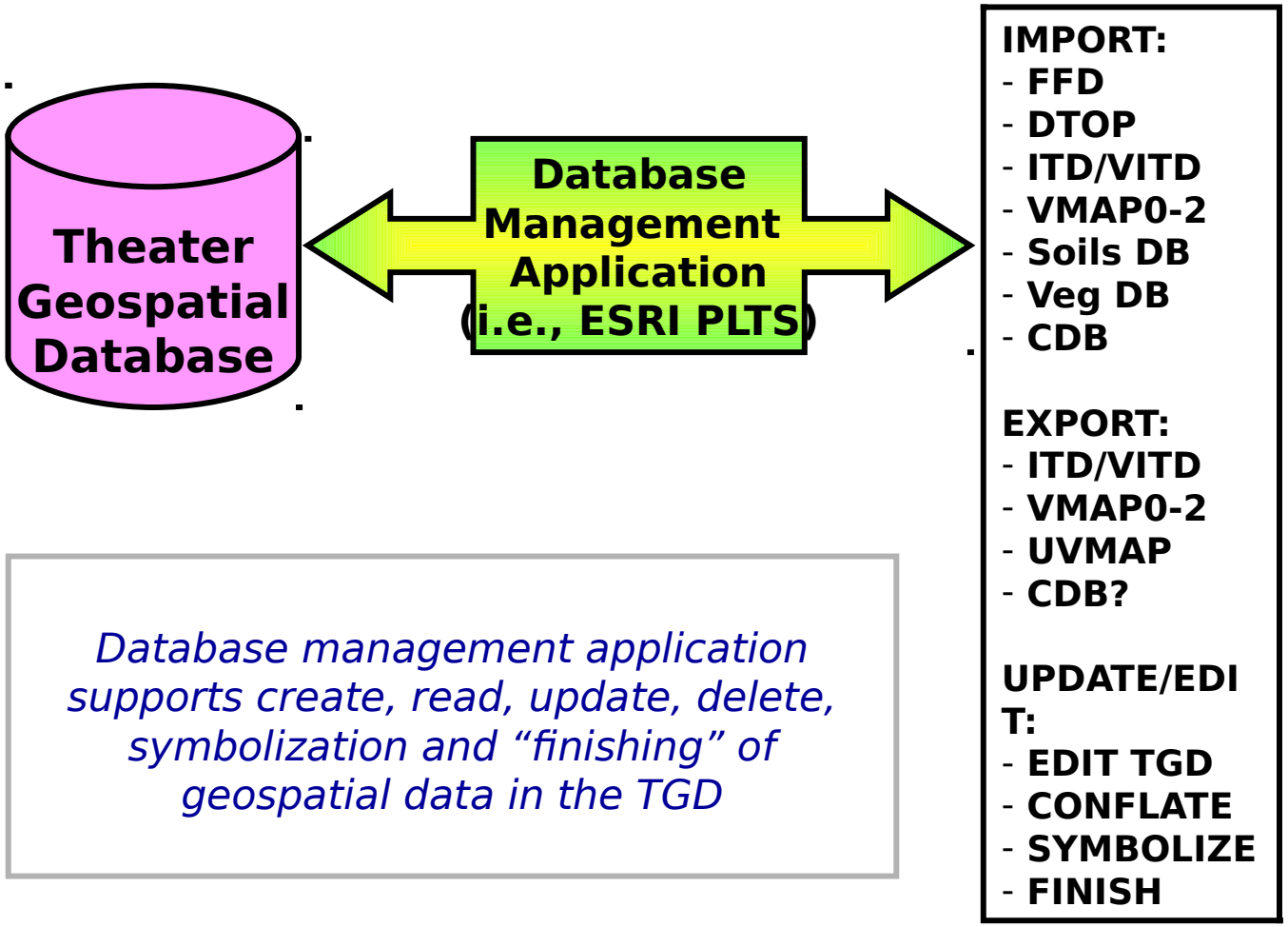
DATABASE MANAGEMENT



Database management application supports create, read, update, delete, symbolization and "finishing" of geospatial data in the TGD

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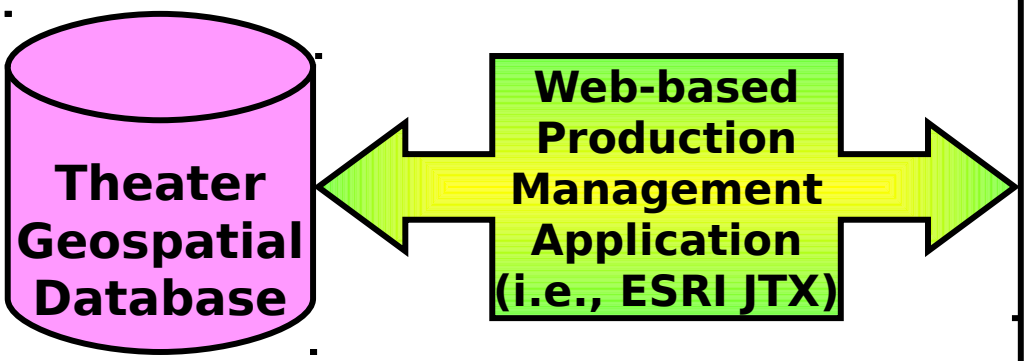
PRODUCTION MANAGEMENT



P&C Team:
- **Refine user requirements**
- **Task/Track**
- **Manage resources**

QC/QA:
- **Automated error detection**
- **Data error resolution**

Production staff:
- **Focused staff**
- **Prioritized work**

Customer:
- **Check Status**
- **Provide input**
- **Browse data**
- **Download data**

Production management/tracking application is developed to manage critical production assets in an information-based business processes

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INTEL/GEO SYSTEMS

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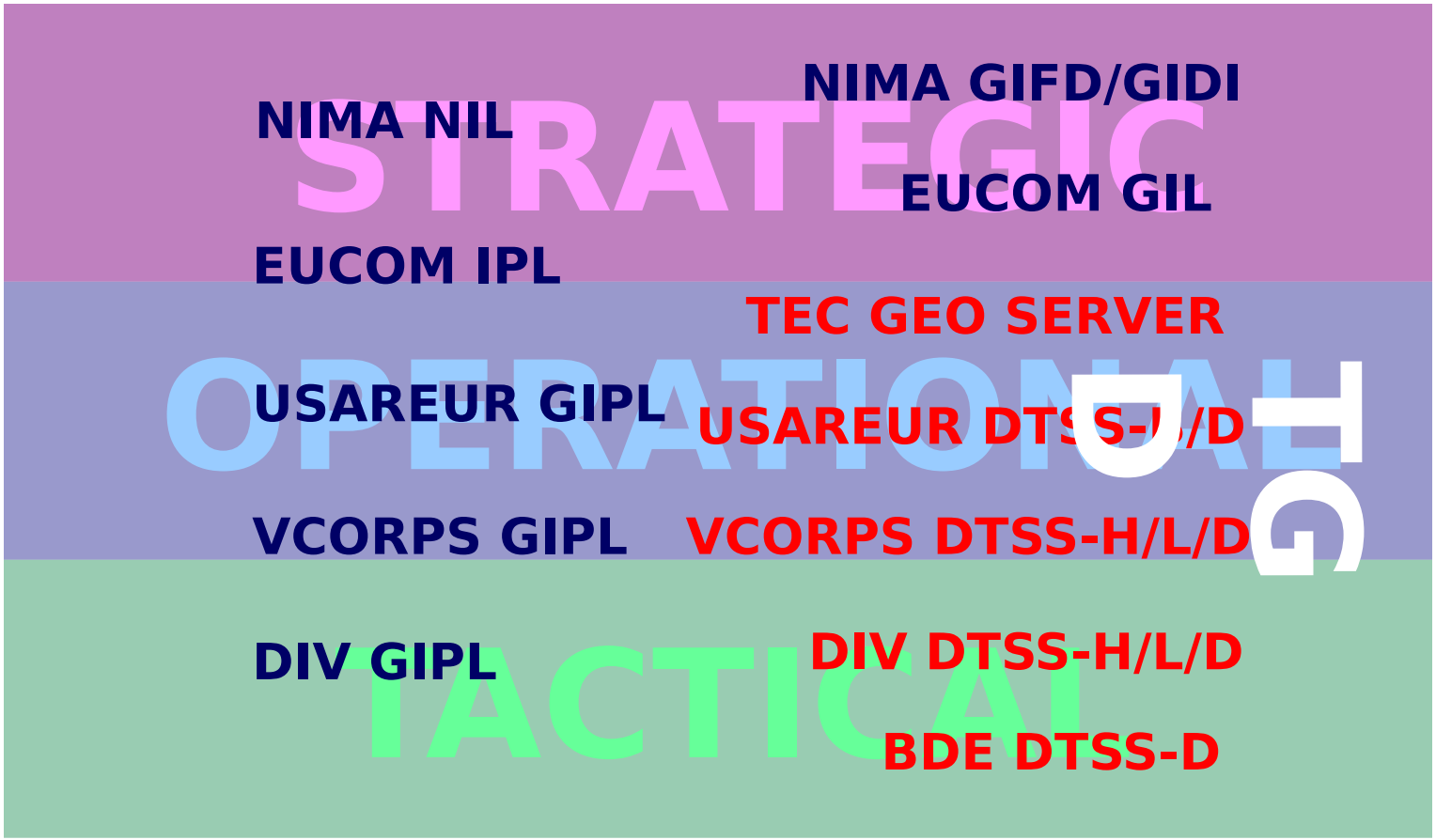
A COMMON GEO FEATURE DATA MODEL IS NEEDED



FEATURES ARE THE FUTURE...

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FACTS

“Maintaining a topographic database is a critical function of all topographic operations (refer to Appendix D). Database development and management is a high-priority mission for all topographic units within the theater. GI databases include old data, new data, accurate data, qualified data, and multiformatted hard-copy and digital data. The analyst and the commander must understand the limitations, accuracy, and intended uses of the GI database. Database management includes the acquisition, manipulation, formatting, storage, and distribution of all hard-copy and digital data and products” (FM 3-34.230, para. 3-88., Topographic Operations)

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FACTS

- **DTSS-B will be fielded to theaters (29th Eng Bn, 30th Eng Bn and 60th Eng Det) in FY03**
- **Data creation/management is an important theater mission (IAW 3-34.230)**
- **Data creation and management tactics, techniques and procedures will be required**
- **Civilians (DAC or contractor) will be required to provide continuity**
- **ESRI Arc products will provide the development platform/environment**

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FACTS

- **Commercial Joint Mapping Tool Kit (C/JMTK) will also use ESRI/ERDAS products**

- **DTSS-B will use Informix as its relational database management system**

- **Robust communications will be required**

- **Training will be required**

- **The TGD must support a Joint Task Force**

- **Standard symbolization and rendering software will be required**

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ASSUMPTIONS

- **New technologies in maintaining data topology will facilitate data conflation and updating in the future**
- **Standard data format export software will be required (i.e., VPF, RPF, DTED, etc.)**
- **DTSS-B provides the required tools for NIMA data set creation and management**
- **Imagery will be available from intelligence sources to support data extraction**
- **A strategy for synchronizing/conflating data between echelons will be required**

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BENEFITS OF TGD

- Critical to transformation to data-centric operations
- Externalizes relevant data from NIMA (i.e., GIFD/ERM)
- Provides effective terrain and intelligence analysis support to IPB/EBA process
- ESRI geodatabase stores topology and supports “Cross-theme” topologic searches
- Vector data support to future systems (i.e., FCS)
- Standardizes and enforces data-centric TTPs
- User-friendly web-enabled interface via SIPRNET
- More efficient bandwidth usage than raster data
- Promotes data accuracy and integrity
- Increased data visibility via standardized metadata
- End-user on-line help capability
- Leverage development efforts by other agencies

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OPERATIONAL CONCEPT

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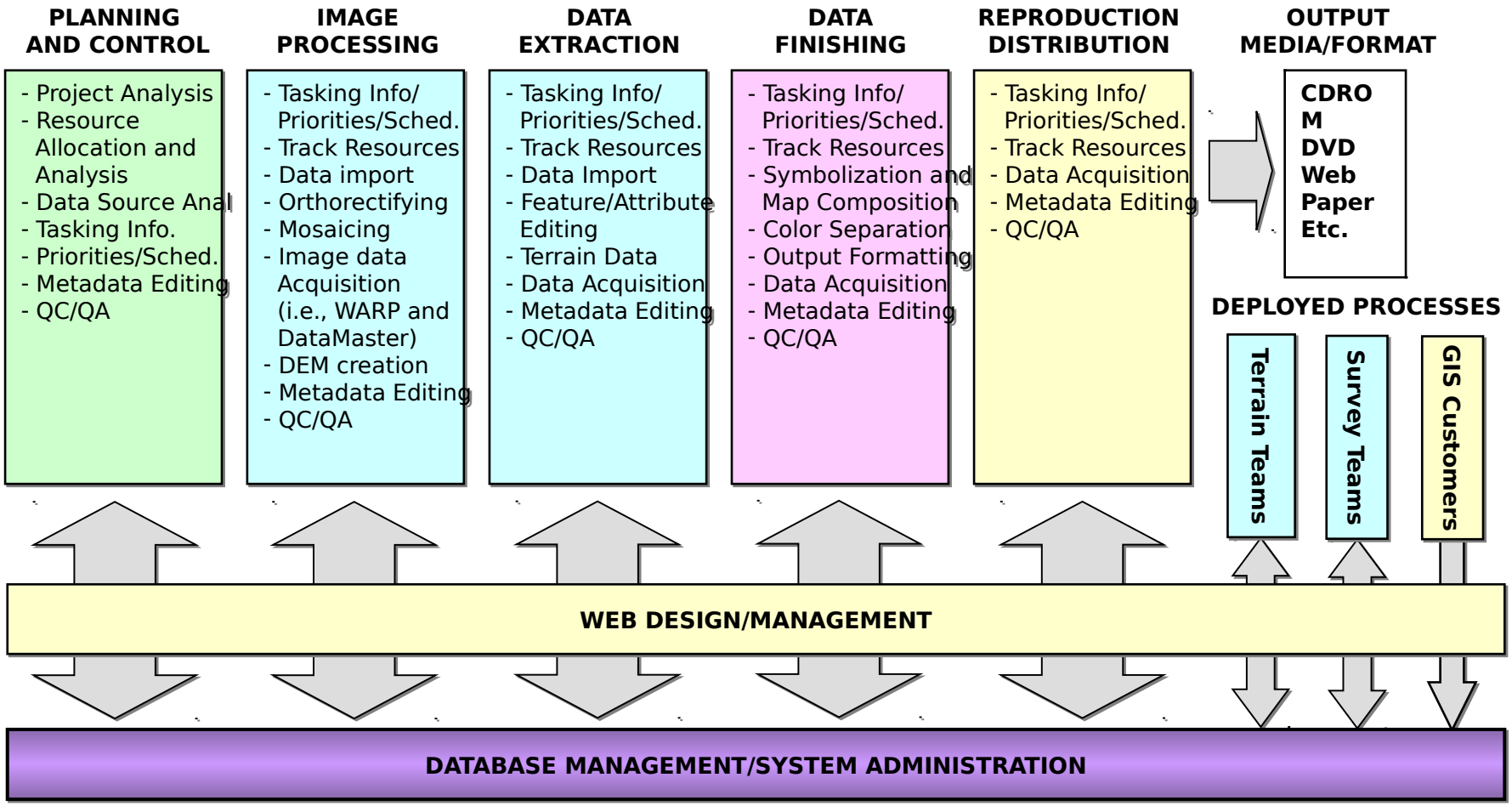

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Geospatial Enterprise Architecture

Framework Preview

HQ USAREUR / 7A GEOSPATIAL ENTERPRISE ARCHITECTURE (GEA)

	WHY	WHAT	WHERE	WHO	WHEN	HOW
COMEUCOM	EUCOM GIS Strategic Plan	EUCOM Geospatial Data Requirements	EUCOM GIS Support Locations	EUCOM GIS Force Structure Requirements	EUCOM TPFDD Requirements	EUCOM Joint Spatial Data Infrastructure
USAREUR/7Army CG	USAREUR Strategic Plans (OPLANS, CONPLANS, NEO, etc.)	USAREUR Geospatial Data Requirements	USAREUR GIS Support Location Requirements	USAREUR GIS Force Structure Requirements	USAREUR GIS TPFDD Requirements	USAREUR Geospatial Enterprise Architecture
DCSENGR / G2	Appendix M Geospatial Data Requirements	Theater Geospatial Database (TGD)	Theater GIS Location Plan	Funding For 60th, 66th, and Terrain Team Force Structure	GIS TPFDD Production Plan	Engineer Battlefield Assessment (EBA) & Intel Prep of Battlefield (IPB)
USAREUR GIS Officer	'UR Geospatial Enterprise Architecture	Standardized 'UR Geospatial Data Model	Commercial JMTK Compliant HW/SW/Network Configuration	USAREUR Geospatial MTOE/TDA	Geospatial Data Acquisition and Production Plan/Schedule	GIS CONOPS and Transformation Plan
60th Eng Det, 66th MI, Terrain Teams	Local Mission Essential Task List (METL)	EBA & IPB Products (COO & MCOO)	Local Architecture: C/JMTK Compliant ArcGIS, ArcSDE, ArcIMS	Task Assignee	Local Production Schedule	Work Flow Assignment & Tracking via Data Production, Management and Tracking (PLTS) & JTX

DoD C4ISR "Views" within the Zachman Framework (Moved the "Why" to the left)

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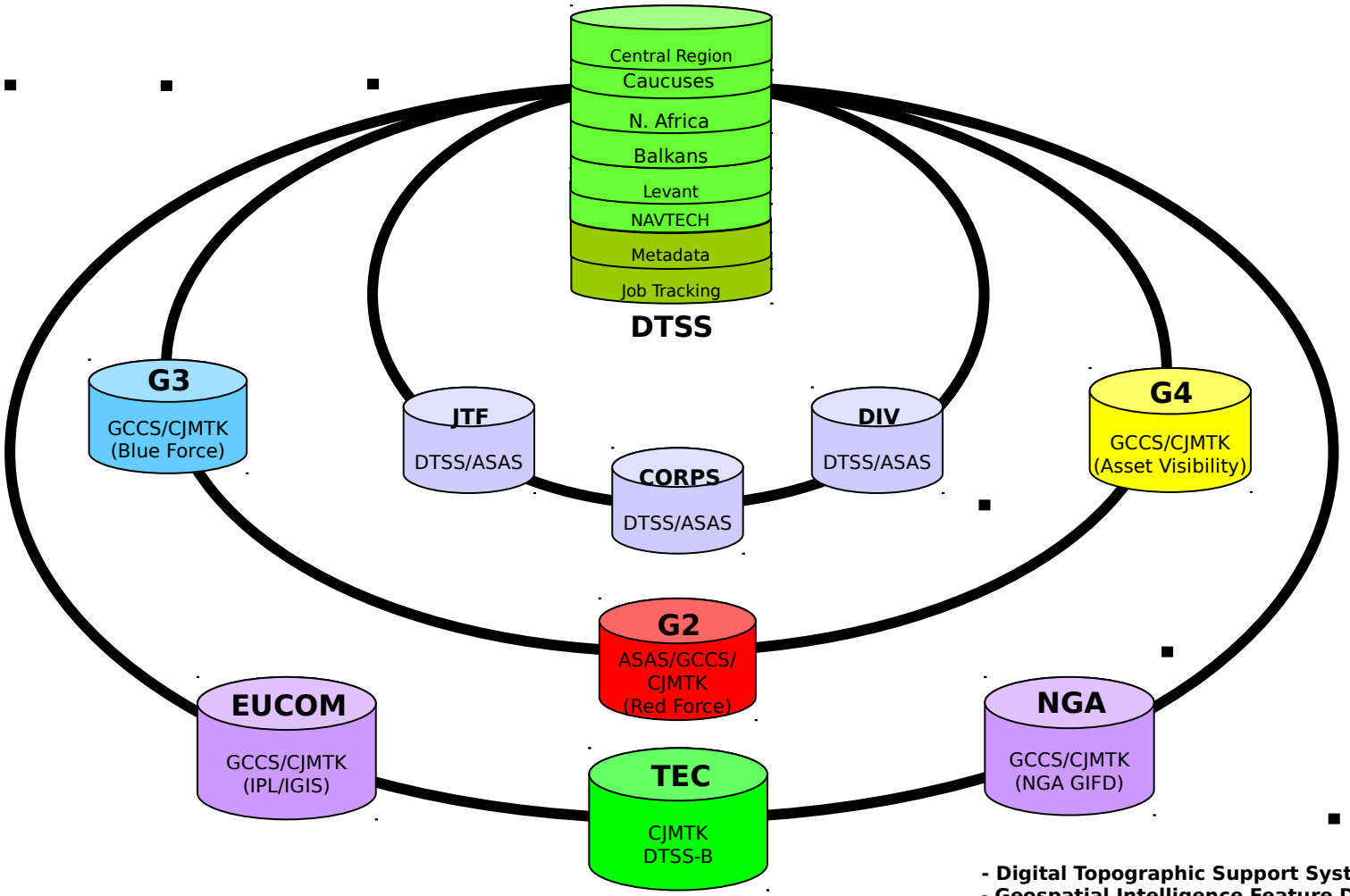
TGD Interoperability

COMMERCIAL JOINT MAPPING TOOL KIT (C/JMTK) PROVIDES INTEROPERABILITY



- **Digital Topographic Support System (DTSS)**
- **Geospatial Intelligence Feature Database (GIFD)**
- **Image Product Library (IPL)**

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EAC Personnel Plan

Past	Current	Transformation	Future
MTOE 08 (TA Team 00)	MTOE 08 (TA Team 00)	MTOE 08 (TA Team 01)	MTOE (FDU) 28 (TA Team 01)
TDA 07	TDA 08	TDA 08	TDA 08
Contractors 08 ($1.1M)	Contractors 09-15 (UFR 6) ($1.3-1.9M)	Contractors 15 ($2.7M)	Contractors 15 ($2.8M)
Totals: USAREUR/Doctrinal (Percent of Doctrinal Force Structure)			
23/121* (19%)	25-31/121* (21-26%)	31/121* (26%)	51/168**
• No TGD • No MTOE TA Team • No EAC Company • Start Contracts	• TGD IOC • No MTOE TA Team • No EAC Company • Add Contractors	• TGD FOC • Build MTOE TA Team • No EAC Company • Add Contractors • Maintain TDA	• TGD (Expand for FCS) • FDU GPC w/TA Team • No EAC Company • Keep Contractors • Maintain TDA

FY02 FY04 FY06 FY08

* Includes EAC Company and P&C Detachment, but not the Topographic Battalion ** Includes FDU ASCC Company and Geospatial Theater Army

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EAC Equipment Plan

Past	Current	Transformation	Future
Fielded TIP/TIES DTSS-D (1) SkyMedia	**Fielded** DTSS-B (1) DTSS-D SkyMedia	**Fielded** DTSS-B DTSS-D SkyMedia	**Fielded** DTSS-B DTSS-D (1) SkyMedia
Non-Fielded Server (1) 7Tb Disk Array (1) PC W/S (6) DVD Jukebox (2) CD/DVD Dup (1) Plotters (6) Taclane Crypto (2)	**Non-Fielded** Server Backup (1) Storage Backup (1) PC W/S (6) Paper Cutter (1) 2-sided Printer (1) SIPR Upgrade (1) LAN Upgrade (1)	**Non-Fielded** Server LCR (2) Storage LCR (1) PC LCR (6) CD/DVD LCR (2) Plotter LCR 6) Crypto LCR (2) GBS Suite? Pocket PCs	**Non-Fielded** Server Upgrd (1) Storage Upgrd (1) PC LCR (6) Paper Cutter LCR Printer LCR (1) SIPRNet LCR LAN LCR
		USAREUR Total Equipment Cost	
$470K **~$300K$**	**18th $300K/G2 $300K**	**~$400K**	
• No DTSS-B (TGD) • New Server • New PC-based • Limited Output • Limited Comms • Sun-based W/S	• DTSS-B/TGD (FOC) • Reconfig Server • PC-based W/S • Improved Output • SIPR Upgrade (OC12) • LAN Upgrade (GIG-E)	• DTSS-B/TGD (P3I) • Life Cycle Replacemt • Deployable Comms • Handheld PCs	• DTSS-B/TGD (P3I) • Server/Storage Upgrd • PM/CTIS programmed Life Cycle Replacmnt (LCR) too late

FY02 **FY04** **FY06** **FY08**

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EAC Software Plan

Past	Current	Transformation	Future
Fielded Solaris WinNT/2000 ArcInfo ERDAS SocetSet	**Fielded** ArcGIS ArcSDE ArcIMS Informix	**Fielded** ArcGIS ERDAS SQL Server	**Fielded** Win XP ArcGIS ERDAS
Non-Fielded Win 2000 Mr. Sid ZEH RIP MET	**Non-Fielded** TGD Development - PLTS - JTX - PS Tracker - SQL Sever DataMaster WinIIS/Apache	**Non-Fielded** Feature Analyst (8) DB Synchronizing Windows (64 bit)	**Non-Fielded** SDS-FIE Interface Mod/Sim Interface
USAREUR Total Software/Development Cost			
$70K ~~$300K~~	18th $650K/G2 $150K	~$300K	
• No DTSS-B (TGD) • New Server • New PC-based • Software Maint	• TGD FOC • Reconfig Server • Improved Output • SIPR/LAN Upgrade	• Windows Upgrade • Eng Toolkit integration • TGD Virtual Network • NGA Interoperability	• Advanced Terrain Vis Data Interoperability - 7th ATC Mod/Sim - IMA-E (SDS-FIE)

FY02 → FY04 → FY06 → FY08

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USAREUR TGD Personnel

18th ENGINEER BRIGADE (TA)

CH, GI&S BRANCH
Mr. Bijeau, DAC

GEOSPATIAL ARCHITECTURE
Mr. Yaryan SPAWAR

GEOSPATIAL TEAM, SETAF
Ms. Frick, NGIT
Mr. Bonnette, NGIT (Sep 04)

60th ENGINEER DETACHMENT (P&C)

PRODUCTION MANAGEMENT (P&C)
- Cartographer, DAC
- CW2 Cossell, 215D
- SFC Heitkamp, 21S
- SSG Dela Rosa, 21S

IMAGE PROCESSING
- Mr. Walker, DAC
- SFC Bonnette/Ali, 21U
- PFC Rhodes, 21U
- Ms. McVicker, NGIT

DATA EXTRACTION
- Cartographer, DAC
- Mr. Wright, DAC
- SGT Adams, 21U
- PFC Rhodes, 21U
- SPC Gobble, 21U
- SPC Plicka/Behnken
- Mr. Livingood, NGIT
- Mr. Ryska, NGIT
- Vacant, NGIT

DATA FINISHING
- Mr. Finney, DAC

REPRODUCTION/ DISTRIBUTION
- Mr. Albiez, IC-05

INFORMATION TECHNOLOGY

WEB DESIGN/SYSTEM ADMINISTRATION
Mr. Cornell, DAC
Mr. Strahan, EDS

DATABASE MANAGEMENT/ADMINISTRATION
Cartographer, DAC

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